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THE IBIS,

A MAGAZINE OF GENERAL ORNITHOLOGY.

EDITED BY

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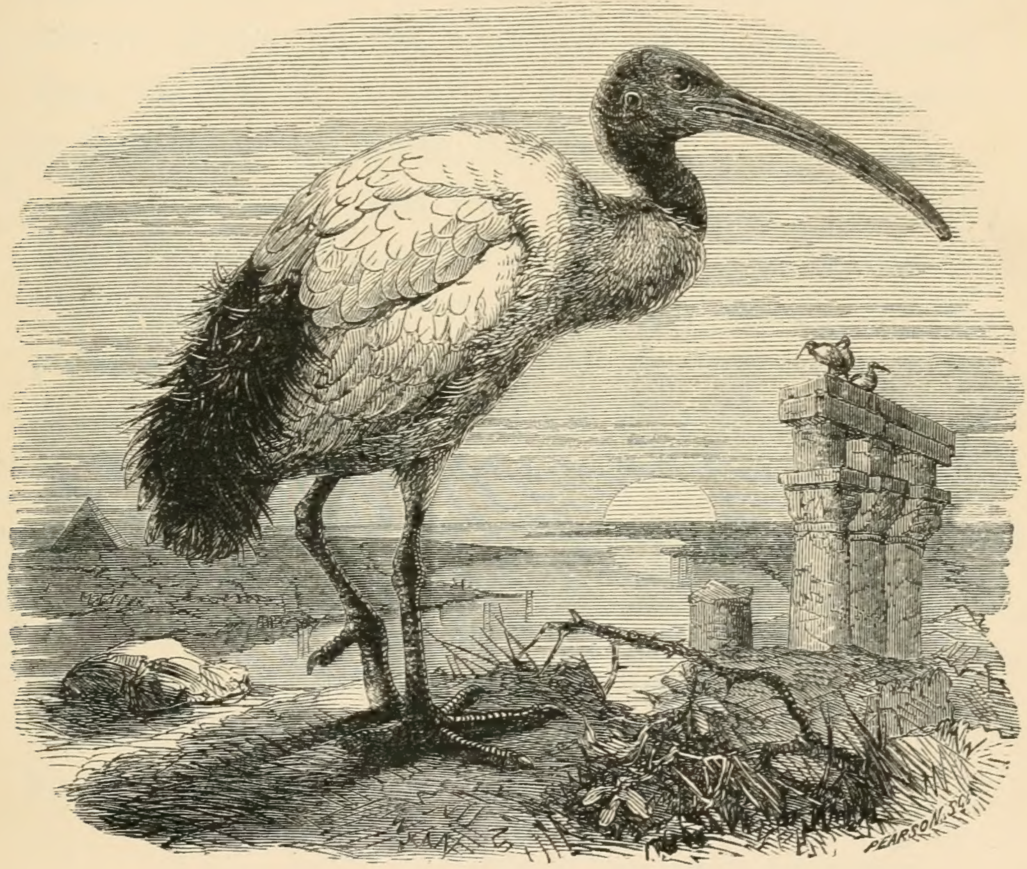

"Ibimus indomiti venerantes Ibida sacram,
Ibimus incolumes qua prior Ibis adest."

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PREFACE.

For a third time the members of the British Ornithologists' Union have the pleasing task of offering their sincere thanks for the assistance they have received from the public, as well as for the support rendered to them by more intimate friends.

In conducting 'The Ibis,' the principal object has been to combine the labours of the two schools of Ornithologists, which, not many years ago, seemed to possess so little in common. It is hoped that this union has been promoted, if not effected, by blending in one periodical the records of observation in the field with those of study in the closet.

Fully confident that the favours hitherto accorded to 'The Ibis' will be continued by the Ornithologists of other lands, its Editor invites the active cooperation of his fellow countrymen, and trusts that they will favour him with frequent contributions to its pages.

PHILIP LUTLEY SCLATER
(*Editor*).

11, Hanover Square,
Oct. 1st, 1861.

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THE IBIS.

No. IX. JANUARY 1861.

I.—*List of the Birds hitherto observed in Greenland.* By Dr. J. Reinhardt, Professor at the Royal Museum of Copenhagen, Foreign Member Z. S. L., &c. &c.

The following list proves of itself how much our knowledge of the Avifauna of Greenland has advanced during the last thirty years; but I may be permitted to prefix a few remarks on the subject. In his celebrated 'Fauna Grœnlandica,' Fabricius enumerates fifty-four birds; two of them, however, are only the young ones of other species*; and four (which he inserted without having seen them, imagining that he recognized them in the narratives of the Eskimaux) are never met with in that country†. They had better therefore be erased from the list. Thus the actual number of Greenland birds with which ornithologists are acquainted through the labours of Fabricius amounts only to forty-eight. After the publication of the work of this most excellent observer, the Avifauna of Greenland received no material increase until 1818, when Captain (now General) Edward Sabine added three species to it, in his well-known "Memoir on the Birds of Greenland"‡. About the same time my late father began to have birds collected in Greenland on a larger scale for the Royal Museum of Copenhagen, which was then under his care, and from this moment dates the great increase in our knowledge of the Avifauna of that country. In 1824 he published a short paper—"Grönlands Fugle efter de nyeste Erfaringer"*—in which four species were added; and fourteen years later, in the Introduction to his 'Ichthyologiske Bidrag til den Grönlandske Fauna'†, he added not less than twenty-one, discovered in the meantime by the various collectors employed by the Royal Museum, and chiefly by Captain Holböll and Dr. Vahl. In the following two or three years some more were received, and thus, in 1842, Holböll was enabled to enumerate, in his 'Ornithologiske Bidrag'‡, eighty-eight species then observed in Greenland,—or rather eighty-six, as two of the birds included by him, *Aquila ossifraga* and *Uria ringvia*, have scarcely any claim to be accounted distinct species. Since Holböll's memoir was written, even this considerable number has increased very much, about thirty species more having been added. For these additions science is indebted to various ornithologists, all duly mentioned in my list; but by far the greater number is owing to the exertions of the late Carl Holböll and others of the indefatigable collectors of the Royal Museum§.

---

* *Falco fuscus* and *Anas glaucion.*

† *Parus bicolor, Mergus merganser, Larus cinerarius* (*ridibundus*), and *Pelecanus cristatus.*

‡ In the 'Transactions of the Linnean Society,' vol. xii. p. 527. The species added by him are, *Tringa canutus, Larus leucopterus* (enumerated as *L. argentatus*, var.), and *Xema sabini. Uria bruennichii*, described by him as a new species, was already, as shown by Faber (Prodr. der Isländ.

In Dr. Walker's paper on the "Ornithology of the Voyage of the 'Fox,'" which lately appeared in this Magazine ('Ibis,'

Ornith. p. 42) and my father, mentioned in the 'Fauna Grœnlandica' under the name of *Alca pica*, and accordingly cannot be considered a real addition to the list; and in the same way, *Falco peregrinus*, also added by Sabine, seems to have been enumerated by Fabricius as *F. rusticolus*.

* In the 'Tidskrift for Naturvidenskaberne,' Kjöbenhavn, 1824, vol. iii. pp. 52–80.

† In the 'Vid. Sel. naturvid. og mathem. Afh.' vii. pp. 85–228.

‡ In Kröyer's 'Naturhistoriske Tidskrift,' 1843, vol. iv. pp. 361–457. A German translation of this paper has been published: "Ornithologischer Beitrag zur Fauna Grönlands von Carl Holböll. Uebersetzt und mit einem Anhange versehen von J. H. Paulsen." Leipzig, 1846.

§ Many of these additions were recorded in the author's "Notitser til Grönlands Ornithologie," published in the 'Videnskabelige Meddelelser fra den naturhistoriske Forening i Kjöbenhavn f. A. 1853,' p. 69, of which paper, a translation, by Dr. Gloger, appeared in Cabanis' 'Journal für Ornithologie,' 1854, p. 423.—Ed.

1860, pp. 165–168), two more species are mentioned, not hitherto recorded as being met with in Greenland. One of them, *Tringa minuta,* I have not included in the following list, as I learn from a private source that the specific name was substituted in error for that of *T. maritima.* The other, *Fuligula cristata,* I have admitted, though with much doubt, for the reason I have hereafter stated. I am also disposed to question the learned Doctor's assertion that *Motacilla alba* breeds in Greenland, suggesting that the eggs of *Saxicola œnanthe* were mistaken by him for those of the former bird, since I am informed that the specimens brought home by him exactly resemble those of the latter species.

A stricter examination of the great number of birds discovered in Greenland after the time of Fabricius will, however, show how highly creditable was the manner in which he investigated its Avifauna; for though the whole number of species has been more than doubled, by far the larger part of the additions is made up of birds which can only be considered as *more or less accidental visitors* to Greenland. The number of birds known to breed in the country is, since Fabricius, only augmented by eleven*; and though probably some six or seven more may in future be found to breed there†, even then the whole number will not amount to more than half of all the species observed.

As might be expected from its geographical position, the North-American character preponderates in the Avifauna of Greenland. When from the 118 species hitherto observed there, we deduct sixty-three which occur throughout the whole polar zone, and accordingly must be considered not to bear on this question (at least as far as they are constantly resident in Greenland), —of the remaining fifty-five there are thirty-five North-American species, nineteen European, and a single one (the Ptarmigan) possibly peculiar to Greenland. A still more marked North-American feature of the fauna results from an observation of Holböll's, that Greenland receives only four of its regular birds of passage from Europe*; and should even this number prove to be too small, and some others (for instance, *Gallinago media* and *Anser albifrons*) be added, there will still be a great preponderance of such birds migrating to Greenland from North America. But, on the other hand, Greenland is marked as being the most westerly, though regular, boundary of some strictly European species,—not only the birds of passage already mentioned, but also others, such as *Aquila albicilla.*

---

* *Anthus ludovicianus, Fringilla canescens, Zonotrichia leucophrys, Tringa canutus, T. schinzii* (Bp.), *Calidris arenaria, Thalassidroma leachii, Stercorarius pomarinus, S. buffoni, Larus leucopterus,* and *Xema sabini.*

† *Gallinago media, Tringa cinclus, Numenius phæopus, Podiceps cornutus, Cygnus musicus, Bernicla leucopsis,* and *Anas acuta.*

Greenland is divided into two "Inspektorater": the southern (South Greenland) includes the settlements ("Kolonier") of Julianehaab, Frederikshaab, Fiskenæsset, Godthaab, Sukkertoppen, and Holsteenborg; in the northern (North Greenland) are the settlements Godhavn, Egedesminde, Christianshaab, Jacobshavn, Ritenbenk, Omenak, and Upernivik.

The names of the species which breed in Greenland are printed in small capitals; those observed as yet in very few instances only, and the accidental stragglers, are marked with an asterisk; the domestic birds are not numbered, but distinguished by a dagger.

1. HALIAËTUS ALBICILLA (Linn.).

Very common: occurs in South Greenland all the year round; in North Greenland only in summer. Besides this, the late Captain Holböll distinguished another larger Eagle with a longer tail, *Haliaëtus ossifragus.* The existence of such a second species I cannot decidedly deny; but all the Eagles which I have received from Greenland appeared to me to be most certainly of one species.

2. FALCO CANDICANS, Gmel.

I am indeed inclined to believe that this species is a collective one, and that there can be distinguished, besides the true *F. candicans*, a *F. islandicus*; but having as yet succeeded only in distinguishing them when in the plumage of the old bird, I prefer not to separate them here. Both forms (be they varieties, races, or species) occur in Greenland; but that one of them (as it has been suggested) is confined to the northern, the other to the southern part of that country, there is, I believe, no reason to suppose.

---

* *Falco peregrinus*, *Saxicola œnanthe*, *Numenius phæopus*, and *Cygnus musicus.*

3. Falco peregrinus, Linn.

Not so common as the former. I think there is no difference between the Peregrine from Greenland and the European one; but I am not competent to express an opinion as to the distinction between *F. peregrinus* and *F. anatum*.

4. Nyctea nivea (Thunb.).

Very common: in summer more numerous in the northern than in the southern part of Greenland.

5. *Otus brachyotus* (Gmel.).

A scarce bird in Greenland.

6. **Hirundo rufa*, Bp.

Nearly thirty years ago a specimen was obtained at Fiskenæsset by the late botanist Dr. Vahl, and sent to the Royal Museum. A second was shot at Nenortalik and procured for the Royal Museum in 1856. As far as I am informed, these two specimens are the only ones ever met with in Greenland.

7. **Troglodytes palustris*, Wils.

Only one specimen has been obtained (in May 1823, at Godthaab), and sent to the Royal Museum.

8. **Regulus calendula* (Linn.).

A very recent addition to the Avifauna of Greenland, a dried-up specimen in the flesh having been sent to the Royal Museum last year from Nenortalik.

9. Saxicola œnanthe (Linn.).

10. **Mniotilta coronata* (Linn.).

I know of three instances in which this bird has been obtained in South Greenland during the last twenty years. The specimens are in the Royal Museum.

11. **Mniotilta virens* (Gmel.).

A specimen sent from Julianehaab in 1853 to the late Mr. Steenberg, and presented by him to the Royal Museum, is the only one which has come under my notice.

12. **Mniotilta striata* (Gmel.).

The only specimen I have heard of is one sent in 1853 from Godthaab to the late Mr. Steenberg, who kindly forwarded it to me for determination.

13. **Mniotilta parus* (Wils.) ?

The only specimen ever obtained (a young bird shot October 16, 1845, at Frederikshaab, and presented to the Royal Museum by Holböll) is in so bad a state that I cannot be positive that I am right in referring it to this species.

14. **Mniotilta americana* (Linn.).

A specimen in a very bad state, but quite recognizable, was sent to the Royal Museum from South Greenland in 1857.

15. **Mniotilta rubricapilla* (Wils.).

Twice obtained; a specimen being procured more than twenty-five years back at Godthaab, and another at Fiskenæsset on the 31st of August, 1840. Both are in the Royal Museum.

16. **Trichas philadelphia* (Wils.).

A specimen was obtained at Fiskenæsset in 1846, another at Julianehaab in 1853. Both are in the Royal Museum.

17. **Motacilla alba*, Linn.

An adult female in summer dress, sent from South Greenland to the Royal Museum in 1849, was, as far as I know, the only specimen ever obtained in Greenland until Dr. Walker had the good fortune to obtain another during his few days' stay at Godhavn in August 1857.

18. ANTHUS LUDOVICIANUS (Gmel.).

19. **Anthus pratensis* (Linn.).

Dr. Paulsen, in Sleswick, received a single specimen from Greenland in 1845. I never saw it myself.

20. **Turdus iliacus*, Linn.

A specimen was sent to Dr. Paulsen in 1845; another was shot at Frederikshaab, October 20, 1845, and presented to the Royal Museum by Captain Holböll.

21. **Turdus minor*, Gmel.

I know of one specimen only, obtained in June 1845 at

Amaraglik, near Godthaab, and presented to the Royal Museum by Holböll.

22. **Tyrannula pusilla*, Sw.

The late Mr. Steenberg received two specimens from Godthaab in 1853; they were both submitted to me for examination, and one of them was presented to the Royal Museum.

23. **Tyrannus cooperi*, Nutt.

A single specimen was shot the 29th of August, 1840, at Nenortalik, and sent to the Royal Museum.

24. **Vireosylva olivacea* (Linn.).

The Royal Museum received a single specimen from Greenland in 1844, without any further information; but I have good reason to believe that it had been obtained in South Greenland.

25. Corvus corax, Linn.

Holböll considers the Greenland Raven to form a particular race, *Corvus corax littoralis*; I confess that I cannot find any material difference between Greenland and European specimens.

26. **Sturnus vulgaris*, Linn.

A female, sent by Holböll to the Royal Museum in 1851, is the only specimen which has come under my notice as having been observed in Greenland.

27. **Agelæus perspicillatus* (Licht.).

A female was obtained September 2nd, 1820, at Nenortalik. In the Royal Museum.

28. Fringilla linaria, Linn.

Common and migratory.

29. Fringilla canescens (Gould).

The *Linota hornemanni* of Holböll. Constantly resident.

30. Zonotrichia leucophrys (Gmel.).

Not numerous; but certainly a breeding bird, although its nest has not been found as yet.

31. Plectrophanes nivalis (Linn.).

32. Plectrophanes lapponicus (Linn.).

33. **Loxia leucoptera* (Gmel.).

An adult bird, probably a male, dried up in the flesh, was procured nearly thirty years ago at Julianehaab from an Eskimaux, who brought it with him from the east coast on a visit to that settlement (Ichth. Bidr. p. 10). In later years another adult male and three young birds have been obtained in South Greenland. The specimens are in the Royal Museum.

34. **Otocorys alpestris* (Linn.).

A single specimen was shot at Godthaab in October 1835, and presented to the Royal Museum by Holböll.

Quoting this bird as "*alpestris*," I certainly do not wish to suggest that it has been misguided to Greenland from "the far east." There can be, I think, no doubt that it is an American straggler; but having no American specimens for comparison, I compared the Greenland specimen with a male of the true *O. alpestris* shot in the neighbourhood of Dresden (Germany) and a female from Denmark, and I cannot find any material difference either in colour or in size. I suppose, therefore, that the American *O. cornuta*, which Bonaparte himself calls a species "à peine distincte de l'*O. alpestris*," has been established without sufficient reason.

35. **Picus varius*, Linn.

I know of two instances in which this Woodpecker has been observed in Greenland. An adult female was found dead on the ground near Julianehaab in July 1845 (and, indeed, birds like Woodpeckers and Crossbills can hardly live more than a few days in a land without trees, such as Greenland). Another female was sent some two or three years ago from South Greenland, but I do not know exactly from what settlement. Both specimens are in the Royal Museum.

36. **Colaptes auratus* (Linn.).

My authority for this bird having been found in Greenland is a German ornithologist, the Pastor Möschler, who mentions that he has received a specimen from thence in 1852 (Cabanis' Journ. f. Ornith. 1856, p. 335). Unfortunately Mr. Möschler gives no particulars about this very curious occurrence.

†COLUMBA DOMESTICA.

†GALLUS GALLORUM.

37. LAGOPUS REINHARDTI, Brehm.

Besides this, Pastor Brehm distinguishes a second Greenland Ptarmigan, *Lagopus grœnlandicus* (Vogelfang, p. 264, note), which, I think, there is no reason to admit. It may even be considered questionable whether the *L. reinhardti* really differs from the *Tetrao lagopus*, Auct.

38. *Squatarola helvetica* (Linn.).

Occurs in very limited numbers.

39. **Vanellus cristatus*, Mey.

An adult male was obtained January 7th, 1820, near Fiskenæsset, and sent to the Royal Museum. A second specimen was received in 1847 from Julianehaab.

40. *Charadrius virginicus*, Bork.

It is a most exact observation of the late Prince Bonaparte†, that the Plover found in Greenland is the American species, and *not* the European Golden Plover, for which it has been mistaken by nearly all former writers, myself not excepted. I have now before me two specimens sent by Holböll himself to the Royal Museum under the name of *Charadrius pluvialis*, and both prove to be the Virginian Plover with *grey axillaries*. The Golden Plover should consequently be erased from the list of Greenland birds.

41. CHARADRIUS HIATICULA, Linn.

42. CINCLUS INTERPRES (Linn.).

43. **Hæmatopus ostralegus*, Linn.

I have seen three specimens of this bird from Greenland; one sent in 1847 from Julianehaab, another in 1851 from Godthaab (both in the Royal Museum); the third I saw in a collection of bird-skins sent last year from Nenortalik, and offered here for sale.

44. **Ardea cinerea*, Linn.

The Common Heron was admitted in the 'Fauna Grœnlandica' upon the authority of the missionary Matthæus Stach, who said that he had seen such a bird the 27th of August,

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† Compt. Rend. xliii. p. 1019.

1765†. Misunderstanding the words of Fabricius, Holböll in his memoir erased the bird (never since observed) from the Greenland Avifauna. But in 1856 a young Heron was found dead near Nenortalik, and sent to the Royal Museum; and this occurrence not only gives the species a claim to be enumerated here, but makes it not unlikely that the old missionary may have been right.

45. *Numenius phæopus* (Linn.).

I have in the last years seen five or six specimens, sent from all parts of Greenland, and know that six others were formerly sent to my late father in the years 1831–35. Therefore, though Holböll doubts it, I should not be surprised if this Curlew in future proved to breed in Greenland. Prince Bonaparte has rather indicated than described‡ a *Numenius melanorhynchus* from Greenland (and Iceland), which he supposes has formerly been mistaken for the true *N. phæopus*. Of course there can be scarcely any doubt that his new species is the same bird, which I still consider to be the European, and, with all due regard for the high authority, I cannot give up this opinion.

46. **Numenius hudsonicus*, Lath.

I myself have never seen more than one specimen of this bird from Greenland—a female sent from Godthaab by Holböll, and described and figured by my father (Ichth. Bidr. p. 19. pl. 2); but Holböll mentions that he obtained the bird twice, at Julianehaab and Fiskenæsset; and a fourth specimen (a very bad one) was sent some thirty years back to the Royal Museum from Jacobshavn, but seems not to have been preserved.

47. **Numenius borealis*, Lath.

The Royal Museum possesses two specimens of this little Curlew, which indeed were not received directly from the Museum's own collectors, but bought at second-hand here in Copenhagen. I have, however, no doubt about their Greenland origin, and they are, I believe, the only specimens ever obtained there. One of them was brought from Greenland in 1858, and is said to have been shot at Julianehaab; about the other I know no particulars.

† David Cranz, Fortsetzung der Historie von Grönland, p. 214. Barby und Leipzig, 1770.

‡ Compt. Rend. xliii. p. 1021.

48. **Limosa ægocephala* (Linn.).

Fabricius mentions that he had seen a single specimen (Fn. Gr. p. 107); and after his time the bird is said to have been obtained once more, nearly forty years back, at Godthaab; the specimen was sent to the Royal Museum, but seems not to have been preserved; at least, I have not been able to find it.

49. TRINGA CANUTA, Linn.

50. TRINGA MARITIMA, Brünn.

51. *Tringa cinclus*, Linn.

Probably this species breeds in Greenland; but, as far as I know, the nest has not yet been found.

52. TRINGA SCHINZII, Bp.

53. **Tringa pectoralis*, Bp.

The Royal Museum received a specimen of this bird in 1851, the first, I think, ever captured in Greenland. Two more were sent in 1859 from Nenortalik.

54. **Totanus flavipes*, Lath.

Pastor Möschler relates that he received a single specimen of this bird from "Greenland" in 1854 (Journ. f. Ornith. 1856, p. 335). I never saw it myself.

55. CALIDRIS ARENARIA (Linn.).

A scarce bird in Greenland; breeds on Disco Island.

56. PHALAROPUS FULICARIUS (Linn.).

57. PHALAROPUS HYPERBOREUS (Linn.).

58. **Macrorhamphus griseus* (Gmel.).

There is, I believe, only one well-established instance of this Snipe being observed in Greenland, namely at Fiskenæsset in 1854 (Ichth. Bidr. p. 20).

59. *Gallinago media*, Steph.

This Snipe has been observed so often in Greenland, that it very likely may in future be found breeding there; but as yet no eggs have been sent from Greenland, as far as I know.

60. **Ortygometra crex* (Linn.).

I am aware of one case only in which this bird has been misguided to Greenland. The specimen (an adult female) was obtained at Godthaab, and presented to the Royal Museum in 1851. Accordingly I have been somewhat surprised to see that Mr. Cassin supposes (Reports of Expl. &c. ix. p. 751) the bird to be a constant summer visitor to Greenland, while it really does not even occur in Iceland as a regular visitor.

61. **Ortygometra porzana* (Linn.).

Besides one obtained the 28th of September, 1841, at Godthaab, and already mentioned by Holböll, another has been captured at Nenortalik, and sent to the Royal Museum in 1856.

62. **Ortygometra carolina* (Linn.).

The specimen mentioned by my father (Ichth. Bidr. p. 20) to have been obtained at Sukkertoppen, October 3, 1823, is the only one ever observed in Greenland. Holböll, by a mistake, quotes the bird as obtained in 1822.

63. *Fulica americana*, Gm.

In the year 1854, a Coot was shot by Mr. Olrik, the Governor of North Greenland, in the harbour of Christianshaab, one of the settlements in Disco Bay, and another was obtained at Godthaab by Mr. Holböll in the same year. The first-mentioned example was presented to Mr. John Barrow, and is now in that gentleman's collection. The other specimen, which I am told was very much injured by the shot, does not seem to have been preserved.

64. ANSER ALBIFRONS (Gm.).

†ANSER CINEREUS DOMESTICUS.

65. *Anser hyperboreus*, Pall.

Only a few young birds hitherto observed. Certainly does not breed on that tract of the Greenland coast occupied by the Danish settlements, and probably not at all in that land.

66. BERNICLA BRENTA (Pall.).

On the whole coast occupied by our settlements, this Goose appears only on the passage to and from its breeding-places in the very high latitudes to the north of the 73rd degree.

67. *Bernicla leucopsis* (Bechst.).

According to Holböll, this species, in autumn, regularly visits the southern part of Greenland ("Julianehaabs-Distrikt"), but he doubts if it breeds anywhere in that land. These two statements do not seem to agree quite well together, and, in fact, I have been told that some few eggs of the Bernacle Goose have been sent from Greenland of late years, but I cannot warrant the truth of this information.

68. *Cygnus ferus,* Ray.

According to accounts received from the Eskimaux, the Swan formerly bred on several places near Godthaab, but was long ago totally exterminated by persecution during the moulting-season (Holböll, Ornith. Bidr. &c. p. 432). In the last fifteen years this bird has again made its appearance in Greenland; some examples were (according to Holböll) observed at Julianehaab in 1846; I have myself seen two specimens, sent from South Greenland in 1852; and in June 1859 a beautiful Swan was shot at Atamik, nearly ten (Danish) miles to the north of Godthaab. The Swan may therefore in future again breed in Greenland, if left undisturbed.

69. ANAS BOSCHAS, Linn.

70. *Anas acuta,* Linn.

Accidental, but not very rare; in North Greenland, as well as in South Greenland.

71. **Anas carolinensis,* Gmel.

Four specimens have been obtained during the last twelve years in South Greenland (Julianehaab and Godthaab), and sent to the Royal Museum.

72. **Anas crecca,* Linn.

According to the statements of my father and Holböll, some few specimens have been shot at different places.

73. **Anas penelope,* Linn.

For the first evidence of this Wigeon having been met with in Greenland we are indebted to Holböll, who sent a young male to the Royal Museum in 1851; besides this, I have seen two other young birds, also obtained in South Greenland.

74. **Fuligula marila* (Linn.).

Two adult males and a female were sent from Nenortalik last year, and were considered by me to be the very first specimens of this Duck ever obtained in Greenland, until I learned from 'The Ibis' (1860, p. 166) that Dr. Walker had already obtained it during his short stay at Godhavn in the beginning of August 1857.

75. **Fuligula cristata,* Ray.

I insert this species upon the authority of Walker, who mentions it amongst the birds obtained at Godhavn during the "Fox's" stay there in 1857 ('The Ibis,' *l. c.*). The capture of this Duck in North Greenland must be considered a very extraordinary fact, as it does not inhabit North America, and as, in Europe, Iceland is not even included in its geographical range.

76. **Clangula islandica** (Gmel.).

Breeds in South Greenland only (Godthaab and Nenortalik).

77. **Clangula albeola* (Linn.).

The adult female obtained nearly thirty years ago at Godthaab, and mentioned by my late father (Ichth. Bidr. p. 22), is still the only specimen ever observed.

78. **Clangula histrionica** (Linn.).

79. **Harelda glacialis** (Linn.).

80. **Somateria mollissima** (Linn.).

81. **Somateria spectabilis** (Linn.).

82. **Œdemia perspicillata* (Linn.).

Only very few specimens obtained.

83. **Mergus serrator,** Linn.

84. **Colymbus glacialis,** Linn.

An interesting variety of this Diver was received in 1859 from Nenortalik, thoroughly silver-grey; the white spots on the back (of the regular plumage) are in this variety still perceivable in a certain light as marks somewhat differently shaded.

85. **Colymbus septentrionalis,** Linn.

86. **Podiceps holbœllii,* Rhdt.

Besides the two specimens (one of them in summer-, the other in winter-plumage) upon which I established this new species in 1853, I have since received a third from Greenland in 1855, the examination of which has confirmed me in considering the bird a distinct species. It is not only its much larger size which distinguishes the Greenland bird from its European relative, but also the very sensible difference in the shape of the bill. In *P. holbœllii* it is, comparatively to its length, not so high at the base as in *P. griseigena,* and of course much more gradually tapering towards the point. In my opinion *P. holbœllii* indeed differs more from *P. griseigena* than many other North-American birds, now generally admitted as distinct, do from the allied European species, as, for instance, *Anas carolinensis* from *A. crecca,* or *Fuligula affinis* from *F. marila.*

87. **Podiceps cornutus* (Gmel.).

Only a few young birds, obtained in the southern part of Greenland.

88. *Alca impennis,* Linn.

The "Geirfugl" now being nearly extinct, it would be in vain to hope to meet with it on the coast of Greenland; but even formerly, when the bird was still numerous at its breeding-places, it seems to have visited Greenland only in winter, and in limited numbers, chiefly of young birds. In the present century, a specimen is known to have been killed at Disco Island in 1821, and one more may perhaps have been captured some years earlier; but the accounts of other instances in which the bird is said to have been obtained in Greenland are hardly to be confided in.

89. **ALCA TORDA,** Linn.

90. **FRATERCULA ARCTICA** (Linn.).

91. **Fratercula glacialis,* Leach.

All the Puffins which I have received from Greenland I consider to be of the common species. As Mr. Cassin, however, mentions (Rep. Expl. ix. p. 903) that he has seen specimens of the *F. glacialis* from thence, I do not hesitate to include this species also in the Greenland Avifauna; but I think it must be considered an accidental visitor.

92. **Fratercula cirrata* (Pallas).

I insert this bird upon the authority of Pastor Möschler, who mentions that he had received a specimen "from Greenland" in 1846 (Journ. f. Ornith. 1856, p. 335).

93. **Uria bruennichii**, Sab.

94. **Uria troile**, Linn.

The *Uria ringvia*, Brünn. (*U. troile leucophthalmos*, Fab.) is only a variety of the common *U. troile*, and very rare in Greenland.

95. **Uria grylle**, Linn.

96. **Arctica alle** (Linn.).

97. **Puffinus major**, Fab.

98. **Puffinus anglorum*, Ray.

99. **Thalassidroma leachii** (Temm.).

100. **Procellaria glacialis**, Linn.

In a former list (Vidensk. Meddel. 1853, p. 69 *seq.*) I admitted as a second species the *P. minor* of Mr. Kjærbölling. A stricter examination has, however, convinced me that it has been established without sufficient reason. The pretended difference in colour at least is not constant, if ever existing; and the small Fulmars are not at all (as it has been stated) confined to North Greenland. The smallest I ever saw (smaller than that of which the measurements are given by Mr. Kjærbölling) was sent to the Royal Museum from South Greenland. On the other hand, I have received examples from North Greenland corresponding exactly in size with others from the Fär Islands.

101. *Stercorarius catarrhactes* (Linn.).

102. **Stercorarius pomarinus** (Temm.).

103. **Stercorarius parasiticus** (Linn.).

104. **Stercorarius buffonii** (Boie).

105. **Larus marinus**, Linn.

106. **Larus glaucus**, Linn.

I have not succeeded in distinguishing a *Larus arcticus* or *L. glacialis* from the true *L. glaucus*. It is quite true that some individuals are paler and much smaller than others; but it appears to me that no certain limits are to be found between these varieties or races.

107. Larus leucopterus, Fab.

108. ? **Larus chalcopterus*, Licht.

Dr. Bruch (J. f. Orn. 1855, p. 282) seems to recognize this species in a Gull which Holböll considers a variety of *L. leucopterus*, and of which he has obtained three specimens only. I myself never saw any of them.

109. **Larus argentatus*, Brünn.

I myself never saw more than one specimen of this species obtained (viz. an adult bird in *winter* plumage, shot at Godthaab about ten years ago), and I have been told of only two or three more sent from thence, and offered here for sale. It is certainly a quite accidental and extremely rare bird in Greenland. Therefore I have been somewhat surprised to learn from Dr. Walker's paper that he had observed this Gull flying about in the harbour of Frederikshaab. I suspect that, in the paper quoted, *Larus argentatus* has been put down by mistake instead of *L. leucopterus* (next to *L. tridactylus*, the commonest Gull in Greenland), which is not mentioned by Dr. Walker, though it probably did not fail in the said harbour.

110. **Larus affinis*, Rhdt., an sp. n.?

When I described this Gull in 1853 (*l. c.* p. 78), I expressly observed that I did not hesitate to consider it as quite distinct from *Larus argentatus* (the mantle being *many shades darker* and the size smaller), but that, on the other hand, an immediate comparison with Audubon's *L. occidentalis* (a species known to me only by description) was necessary before deciding finally upon its claims to be considered a new species, and that I should even have referred it to the said Gull had it not been for the very superior size of the latter, as given by Audubon (Orn. Biogr. v. p. 320, and Syn B. N. Am. p. 328). I am still unable to solve the question; but I may be permitted to observe, that it at all events appears to me a mistake, when the late Prince Bonaparte, in his 'Conspectus' (pt. 2. p. 218), refers my *L. affinis* to

L. argentatoides, Rich. (the only race of *argentatus* admitted by him as American), this doubtful species being *paler* even than the *L. argentatus* proper, and consequently differing still more from my *L. affinis.*

The specimen described in 1853, and still the only one which I have seen of my *L. affinis,* is in the Royal Museum.

111. Rissa tridactyla (Linn.).

112. Pagophila eburnea (Gmel.).

113.? *Pagophila brachytarsa* (Holb.).

Holböll established this Gull (which I have never seen) upon three specimens, obtained at different times, but unfortunately lost even before the publication of his memoir on the Avifauna of Greenland. Afterwards he seems to have failed in his endeavours to get more examples, and I doubt whether any collection possesses an authentic or type specimen. This is much to be regretted. Different authors also do not quite agree in the characters which they ascribe to the supposed new species, and it seems to require further investigation before it can be finally admitted. Indeed, Holböll gives his *Larus brachytarsus* a tarsus 5 lines shorter than that of *P. eburnea,* while Brehm, who identifies Holböll's Gull with his *P. nivea,* admits only a difference of 2 lines in the length of the tarsus (Vogelfang, p. 344). Again, Bonaparte, who also adopts Brehm's name, and has examined a specimen in the Paris Museum brought from Spitzbergen by Gaimard, does not mention the length of the tarsus, but makes, in direct opposition to Holböll, Bruch, and Brehm, the new species *larger* than the true *P. eburnea* (Consp. ii. p. 230).

Lastly, it may be observed here, that it is a slight error of Bruch (in which he has been followed by Bonaparte and Brehm) to confine the *Pagophila brachytarsa* to *North* Greenland (Cabanis' Journ. 1854, p. 106; 1855, p. 287); indeed, Holböll says positively that he obtained one of his three specimens at Godthaab in *South* Greenland.

114. **Rhodostethia rosea* (Macgill.).

In my former lists this species is not admitted; the reason it is so here is, that I have been told by a trustworthy person that

Holböll formerly possessed an example, probably obtained in Greenland during the latter years of his life.

115. XEMA SABINI, J. Sab.

Very rare in the Danish settlements; breeds only to the north of Upernavik.

116. STERNA MACROURA, Naum.

117. **Sula bassana* (Linn.).

Accidental and rare.

118. GRACULUS CARBO (Linn.).

Copenhagen, 31st July, 1860.

II.—*Note on* Milvago carunculatus *and its allied species.*

By PHILIP LUTLEY SCLATER.

(Plate I.)

IN my description of *Accipiter collaris* in last year's volume of 'The Ibis' (p. 147 *et seq.*), I spoke of *Milvago carunculatus* as another scarce Raptorial bird peculiar to New Granada, of which, at the time I was writing, I believed but one specimen was known to exist in scientific collections. M. O. Des Murs, having noticed this allusion, has most kindly sent to me the original description of *Milvago carunculatus,* as it was prepared for his 'Iconographie Ornithologique' in 1845. That work having (unfortunately for science) been discontinued shortly afterwards, M. Des Murs' article was never published, and merely a short notice of this new species was subsequently given by him in the 'Revue Zoologique' for 1853 (p. 154). I now have the pleasure of giving M. Des Murs' full description, as follows:—

POLYBORUS (*Milvago, Phalcobænus*) CARUNCULATUS, Des Murs.

Supra nigro-splendens; remigibus primariis, secundariis et tectricum alarium majorum apicibus albis; rectricibus in toto nigris, albo late marginatis; supracaudalibus albis: subtus niger, albo regulariter flammato seu squamato; abdomine inferiore, crisso, femoribus subcaudalibusque candidis: caruneulis ceraque aurantiis; pedibus flavis.

Cette belle espèce de *Polyborus* a la plus grande ressemblance et l'affinité la plus intime avec le *P. montanus* de d'Orbigny.

Ainsi, c'est, en-dessus, la même coloration, le même noir luisant recouvrant la tête, le derrière et les côtés du cou, les épaules, le dos, les scapulaires et les ailes; c'est le même blanc garnissant l'extrémité des grandes et des moyennes rémiges; comme lui, il a les rectrices noires, bordées à leur extrémité d'une large bande blanche, et les couvertures caudales supérieures, de même que celles inférieures et les cuisses également blanches; comme chez le *P. montanus* enfin sa tête est garnie de plumes crépues et comme frisées se retournant en avant, et formant une espèce de toupet sur tout le sommet de la tête depuis la base du bec jusqu'à la naissance de la nuque.

Mais ce qui paraît l'en différencier spécifiquement d'une manière particulière, c'est la présence, à la base latérale de la mandibule supérieure, d'une espèce de caroncule charnue, provenant de la dilatation excessive, relativement à ses congénères, de la partie dénudée de cette région,—dilatation tellement prononcée qu'elle a même résisté aux effets de la dessication de la dépouille de l'oiseau, en dehors de tout procédé artificiel; l'indice de ce développement caronculaire, chez cette espèce, est d'autant plus frappant qu'il se retrouve sur toute la surface du menton, dont la peau, au lieu d'être recouverte entièrement d'un duvet plumeux d'un noir-brunâtre ainsi que cela a lieu chez le *P. montanus,* est au contraire tout-à-fait nue et granuleuse, n'offrant que quelques poils fins, épars.

Ce qui l'en distingue encore, sous le rapport de la coloration, c'est, d'abord, la présence, à l'extrémité de chacune des grandes couvertures alaires, d'une large bande blanche; ce blanc, au surplus, est plus accusé à chacune des rémiges, chez cette espèce, que chez le *P. montanus.* C'est, ensuite, l'aspect qu'offre tout le dessous du corps: le *P. montanus,* depuis le menton jusqu'au sommet de l'abdomen, est d'un noir intense uniforme; le *P. carunculatus,* au contraire, a toute cette partie largement flamméchée de blanc sur un fond noir, ou blanc écaillé de noir,—chaque plume étant réellement blanche dans tout son milieu, et régulièrement encadrée de noir sur son contour; de plus, cette coloration, au lieu de s'arrêter au haut de l'abdomen, descend jusqu'entre les cuisses, et orne également les flancs, qui sont blancs chez le *P. montanus.*

Nous ajouterons, que le bec est sensiblement plus long, et d'une forme tout-à-fait distincte de celui du *P. montanus*: ce dernier, dans la convexité de l'arête de la mandibule supérieure, est comme ramassé, et conserve une hauteur assez prononcée; le *P. carunculatus*, au contraire, a le bec très-peu arqué, sa convexité, ou courbure, étant réduite à une inclinaison graduellement continué depuis la naissance de la mandibule jusqu'à sa pointe; ce bec, d'ailleurs, est beaucoup plus allongé que celui du *P. montanus*.

Les ongles offrent également cette différence dans notre espèce, qu'ils sont d'un noir uniforme, tandis que ceux des deux exemplaires de *P. montanus* rapportés par M. d'Orbigny au Muséum d'Histoire Naturelle de Paris, les ont du couleur de corne blanchâtre, et ont, relativement, l'air d'être tout-à-fait blancs.

La peau du lorum, la cire et la base du bec, de même que le menton, et ses appendices caronculaires, sont d'un jaune orangé; les tarses simplement jaunes.

Les dimensions sont les mêmes en général que celles du *P. montanus*, dont les ailes sont de 02 centimètres plus larges; en voici le tableau comparatif:—

	P. carunculatus. Centimètres.	*P. montanus.* Centimètres.
Longueur totale	52	57
,, des ailes	38	41
,, de la queue	20	23
,, des tarses	08½	08½
,, du bec à partir de la commissure	05	04
,, du bec à partir de la cire	03½	02½

Ainsi, on le voit, le *P. montanus* est, en définitive, un peu plus grand que le *P. carunculatus*; mais celui-ci offre un bec beaucoup plus développé et de forme particulière; ce bec est de la même couleur dans les deux espèces—d'un corne bleuâtre dans la première moitié de sa longueur, et blanchâtre dans le reste; l'iris est brun foncé. Les narines sont infiniment plus larges chez notre espèce.

Cet oiseau est unique dans la collection de M. Th. Wilson, de Philadelphie. C'est de l'obligeance de son frère, M. Edw. Wilson, de Liverpool, que nous en devons la communication. Il

vient de la Nouvelle-Granade. Ceux de M. d'Orbigny venaient de la Bolivie. Ailes venant presque au niveau de la queue.

1845. O. Des Murs.

To this I am enabled to add a few particulars under the following circumstances:—Shortly after the publication of the article in last year's 'Ibis,' I received a collection of birds, formed by Mr. Fraser on Pichincha and in other elevated localities in the neighbourhood of Quito, of which I have given a list in the Proceedings of the Zoological Society for the past year (P. Z. S. 1860, p. 73). The *Milvago,* of which one example was in the collection, I then observed, was evidently of the species named by M. Des Murs *carunculatus,* and quite distinct from the Bolivian *M. megalopterus* (*montanus,* D'Orb.), to which I had previously referred similar examples collected by Mr. Fraser in Ecuador*, though not without remarking on their apparent difference from the usual plumage of the latter species. The examples of this *Milvago* collected by Mr. Fraser have been placed by Mr. J.H. Gurney in the Norwich Museum. They are all three in adult plumage, as is also the fine example represented in the accompanying illustration (Plate I.), for which I have to thank Mr. Gurney. The present specimen, which is destined to adorn the Museum of Bremen, was received by Mr. Gould with other birds from the Rio Napo, on the eastern slope of the Andes of Ecuador.

The synonymy of *Milvago carunculatus* will now stand as follows:—

Phalcobœnus carunculatus, Des Murs, Rev. et Mag. de Zool. 1853, p. 154.
Milvago megalopterus, Sclater, P. Z. S. 1858, p. 555 (*err.*).
Milvago carunculatus, Sclater, P. Z. S. 1860, p. 81.

Its habitat must be extended to the higher Andean ranges of the republic of Ecuador (alt. 14,000 feet), where Mr. Fraser's examples were procured. I have already given Mr. Fraser's remarks on the habits, colouring of the soft parts, &c., in full in the 'Proceedings' (*l. c.*); but I have to thank him for the following additional note:—

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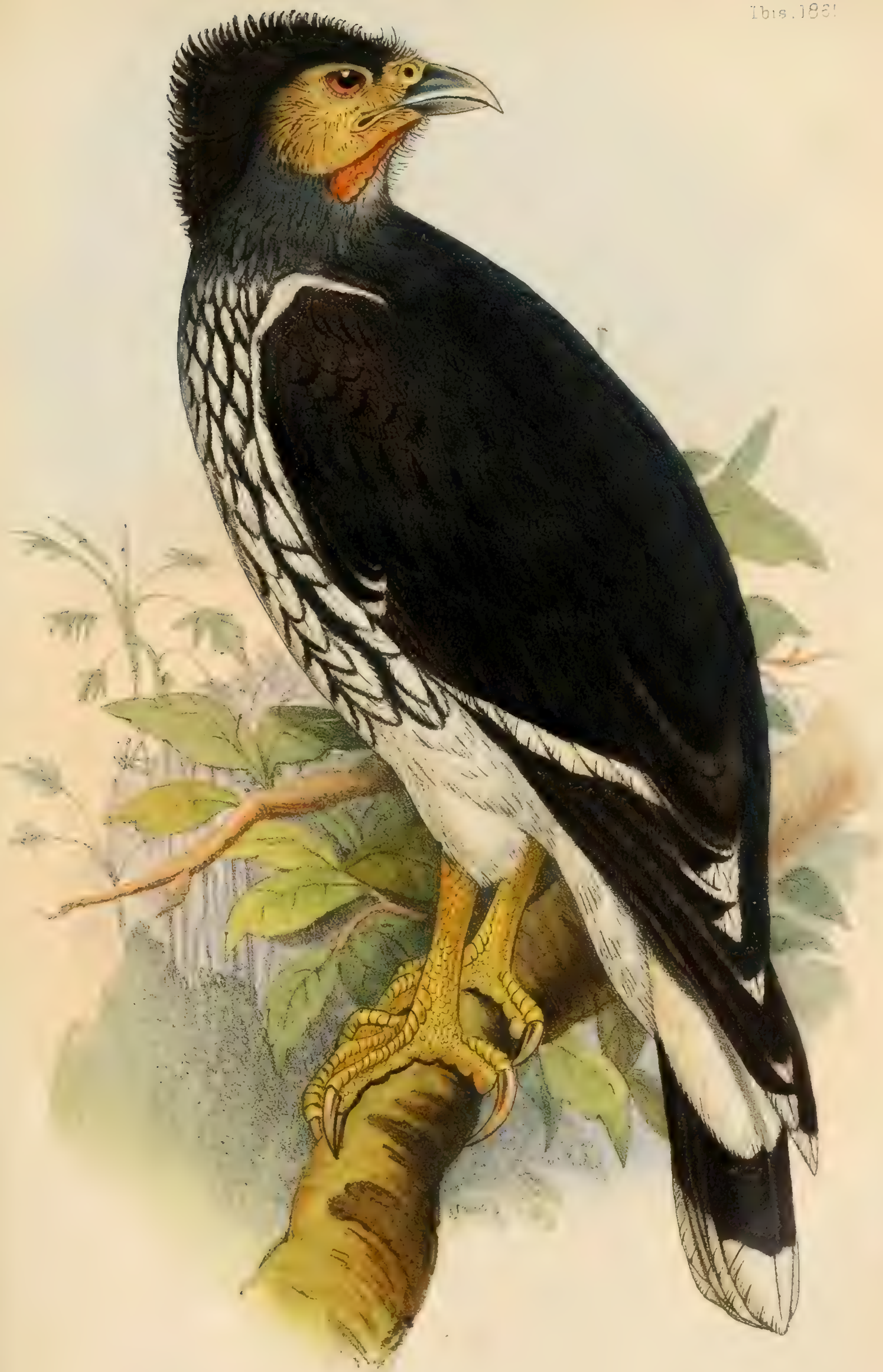
* See P. Z. S. 1858, p. 555.



MILVAGO CARUNCULATUS.

"The Spanish name should be spelt '*Curricinga*,' nec *Curricunga*.

"I was wrong in calling it 'the *road* to Guaqua Pichincha'; it is merely the track or tracks made by the 'snow-carriers,' who bring down that article daily, and supply the inhabitants of Quito with the luxury they please to name '*ice*.' It requires considerable experience to follow these paths, in safety, through the '*paja*' or long grass with which the Paramo is clothed.

"All that I remember, beyond what is already published in the Proceedings of the Zoological Society, is having noticed for the first time a few pairs walking in the grass, amongst the cattle, on the table-lands to the south of Quito, when *en route* for Babahoyo in June 1859."

There appear to be, therefore, three nearly allied species of *Milvago*, forming the subsection *Phalcobœnus*, and occupying different areas in South America.

1. M. CARUNCULATUS. *Pectore nigro, albo guttato.* Ex mont. Novæ Granadæ et reipubl. Equatorialis.

2. M. MEGALOPTERUS (*Aquila megaloptera*, Meyen: *Phalcobœnus montanus*, Lafr. et d'Orb.). *Pectore nigro, immaculato.* Ex mont. Peruviæ et Boliviæ.

3. M. ALBOGULARIS, Gould (Darw. Zool. Beagle, pl. 1. p. 18). *Gutture et pectore albis.* Ex Patagonia.

III.—*Notes on the Ornithology of Hongkong, Macao, and Canton, made during the latter end of February, March, April, and the beginning of May*, 1860. By ROBERT SWINHOE, of H. B. M.'s Consular Service.

HONGKONG is set down as distant 280 miles by sea from Amoy, and, being in latitude 22° 15′, falls well within the tropics. We ought therefore naturally to expect more interesting feathered forms than appear in the subjoined list; yet, if you exclude the *Micronisus gabar* (which may also occasionally be found at Amoy) and the large *Ketupa*, no bird came within my observation about Hongkong and its neighbouring main which does not occur somewhere in the neighbourhood of Amoy.

At Macao I fell in with two species I had not seen before;

only one of these I procured, which I have marked *Larvivora* sp. ?.

Canton, with its fine old trees towering everywhere throughout the town, and its well-wooded surrounding country, literally swarms with birds, and I can safely assert that no place on this coast equals it for the number and variety of its Avifauna. If I had spent a few months there instead of a week or two, I could have swelled my collection into colossal proportions. Canton is distant about ninty-eight miles by river from Hongkong, and is in the same latitude as Calcutta.

1. PANDION HALIAËTUS (Linn.). Osprey.

As we steamed out of Amoy, this bird was seen soaring over the bay, and at the entrance to Swatow it was seen again, seated on a fishing-stake. In Hongkong I have often watched the Ospreys gradually ascending into the air in large sweeping circles, when their rounded tails and peculiar upward inclination of the wings at once distinguish them from the Kites which abound in the harbour. Pigeons before alighting have this same peculiarity of inclining the wings upwards; and Swifts (*Cypselus affinis*, Gray) practise the same as they dart and gambol through the air before roosting, uttering the while a quick succession of sharp notes. When the Osprey is seen flying overland with slow heavy flaps, he has a very *Buteonine* aspect.

I was told that a large *Sea-Eagle* had been occasionally seen at Hongkong, but, from his wariness and inaccessibility, no one had succeeded in getting a shot at him. On one occasion, in Amoy, I saw a very large bird of prey sitting in a tree, which I took to be a Sea-Eagle. He was at least 200 yards off, yet took alarm at my appearance.

2. FALCO PEREGRINUS, Linn.
3. TINNUNCULUS ALAUDARIUS (Briss.).
} Both observed near Hongkong.

4. BUTEO JAPONICUS, Bp.* Japanese Buzzard.

A pair frequented the Happy Valley, Hongkong. I have seen them early in the morning, pursuing each other with loud screams.

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* Perhaps rather paler than *B. vulgaris*, but hardly specifically distinct, according to Mr. Blyth (J. A. S. B. xxx. p. 95).—P. L. S.

5. MILVUS GOVINDA, Sykes[*]. Brahminy Kite. Common.

6. MICRONISUS —— ?[†]. Small Blue Sparrow-Hawk. We were watching some Swallows (*H. gutturalis*) sporting over a pond, when suddenly a small short-winged Hawk appeared among them, and would certainly have caught one had not one of my comrades brought him down with a broken wing. The little fellow was much excited, and fought hard with his bill and claws for life. He was a much handsomer bird than *M. badius*, though about the same size; blue-grey above; beneath banded with dark undulating lines; the flanks and belly deeply washed with buff ochre. The bill was blue-black; the cere, iris, and legs golden yellow, with black claws. The specimen was accidentally lost, being served up at table by the Chinese servant in mistake for a pigeon.

This same species is by no means uncommon in the neighbourhood of Hongkong, and you often see them even over the streets of Victoria, poising with almost motionless wing, while the tail is continually opened and shut like a fan. The length of tail and shortness of wing at once distinguish this bird from the Wind-hover or Kestrel, which species, so common at Amoy, seldom fell under my notice here. At Canton, several of these small Hawks were nesting in a grove of pines. The nests were small and cup-shaped, and placed high up, near the tree top. I was unable to procure either the eggs or young, nor did I succeed in securing a second specimen of the mature bird.

7. ATHENE —— ?[‡].

A small brown Owl, with transverse yellowish bars and spots. This bird was brought to me alive by a Chinese at Canton, and is markedly smaller than birds similarly coloured received from Foochow. The native name is *Ning-long-chay.* I find that the bird procured, which I forward for Mr. Sclater's examination, is a mature specimen; and it therefore appears that either this species has a second year's moult, when it loses all the yellowish bands and markings, or that I have confounded two species under one denomination.

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[*] Mr. Blyth (J. A. S. B. xxx. p. 95) seems to consider the Chinese Kite, *Milvus melanotis* of the 'Fauna Japonica,' as distinct; but Mr. Gurney informs me that his Chinese specimens are not different from *M. govinda* of India.—P. L. S.

[†] This is probably *Micronisus soloënsis* (Horsf.).—P. L. S.

[‡] This *Athene* seems to be *Noctua cuculoides*, Vigors (Gould's Cent. pl. 4), already recognized by Blyth (Cat. Mus. As. Soc. p. 39) as occurring in Chusan.—P. L. S.

I extract the notes in my journal made on the fresh mature male above mentioned:—Bill greenish or dusky yellow. Iris clear golden king's yellow. Legs chrome-yellow, with stiff bristles; claws pale yellowish at the base and brown towards the tips. Crura of furculum only ossified for about one-half of their length, and joined by a cartilaginous arch. Tibial tendons very rigid. Testicles not large, somewhat kidney-shaped, and yellowish. Proventriculus $\frac{6}{8}$ in. across; gizzard round and flattened, flanked on each side with a strong radiating muscle, about $1\frac{2}{8}$ in. in diameter, and lined inside with a fixed rugose cuticle. Intestines 16 inches long: cæca situate about $1\frac{1}{8}$ in. from anus; right cæcum $2\frac{2}{8}$, left 2 in. in length, both enlarging at their ends into black, semitransparent bulbs.

8. OTUS BRACHYOTUS (Gm.). Cantonese, "*Maou taou ying*" (Cat's-head Hawk).

This tawny Owl, with black spots and well-defined facial disc, was also brought alive to me in Canton. It is a species I have never before met with in China. Length $14\frac{1}{2}$ in.; wing 18 in. from curvature; tail 6. Bill black, with a pale tip. Iris bright golden yellow. Legs and feet covered with ochreous feathers, with the ends of the toes naked and of a pale blackish flesh-colour; claws sharp and blackish brown. Tibial tendons very rigid. Testicles like two small white eggs, placed with their ends pointing in different directions. Proventriculus 1 in. in length by $\frac{5\frac{1}{2}}{8}$ in breadth, granulated, and contracting somewhat at the mouth of the gizzard, which is roundish, about 1 in. in diameter, soft and flabby, lined with a fixed network-furrowed cuticle. The stomach contained a thick yellow juice and a few *fish-bones*. Intestines $18\frac{1}{2}$ in. long: cæca about 1 in. from anus; left cæcum 2^{6}, right $2\frac{3}{8}$ in. in length, the first bulging much more at the end than the second.

9. KETUPA CEYLONENSIS (Gm.)*. Crab Owl.

This magnificent Horned Owl, so like *Bubo maximus*, but at once distinguishable from that bird by the naked tarsi, is a constant tenant of the dark rocky ravines of Hongkong. The European cemetery in the Happy Valley is separated from the racecourse by a broad road, and bounded in the front by a high wall with a central gateway. At the rear of this enclosure, which abounds in graceful tombs and funereal trees, rises a high hill, well-wooded, and cleft by a ravine tangled over by most luxuriant vegetation. In this lovely spot are found some of the choicest ferns and plants for which Hongkong is justly celebrated. Happening to pass one day, after I had stood enjoying the glorious view, I rambled up a narrow path, gun in hand. A Bulbul flew past me, and then another; and, as they perched within gunshot on a bush, I fired at them, when, to my astonishment, from under a gigantic black rock which rested on a smaller one, thus forming a natural cave, out flew a great Owl, and alighted on a branch close above me, with raised crest and ruffled feathers, evidently much bewildered and startled by the report of the gun. He was not, however, more astonished than myself, and by the time I had recovered myself he had also recovered himself, and, seeing me standing near, made off to the other side of the hill. I saw him settle on a tree, and thinking that an Owl by day was an easy prey, I pursued. But his eyes were too good; I could not get near him. I thereupon returned to his roost, and found, by the feathers and old casts, that the ledge underneath the rock must have been long tenanted. But what surprised me most was to find that the casts consisted chiefly of morsels of crab-shells and claws, together with a few bones of some small murine animals. Two days afterwards I again put the Owl out of the same haunt, but somehow managed to miss him.

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* Certainly this species, and not *K. javanica*, as supposed by Mr. Swinhoe. Mr. Swinhoe speaks of the iris of *Ketupa ceylonensis* as "orange." I am informed by Mr. J. H. Gurney, that, in a specimen which was in the Zoological Society's Gardens some years since, the irides were of a very bright clear and pure yellow, without any tint of orange. It would appear therefore that the colouring of the irides in this species varies as it does in *Bubo maximus*, the very old individuals of which have much redder irides than the young ones.—P. L. S.

The shot alarmed him; he never returned. Residents assure me that this bird is of frequent occurrence there, and that at night-time they may often be seen, seated on the tops of the houses facing the harbour. From the casts and excrement being frequently met with, I should certainly imagine that they were pretty abundant.

On my return from Macao I was fortunate enough to procure the specimen that I send herewith. It was in this wise. Mr. Wilford (the botanist sent out by Sir William Hooker) was out with me for a ramble in the neighbourhood of Jardine, Matheson and Co.'s grounds, close to a ravine, where a lot of small Chinese boys had gathered round us to see our sport. They pointed to some Kites that were diving at one another some distance over our heads, and for the amusement of the small boys, I fired at them twice. The shot must have tickled them, for they dropped the bone of contention, a putrid duck's head. But the report of the discharges reverberating along the ravine startled a dozing *Ketupa,* and out he came from his roost, and settled on a rock a long way up the hill. He flew out so quietly that we should probably not have observed him had it not been for the Kites, who soon spied him, and kept hovering over him, and flying down at him. Not enjoying their indignities, and observing that all near was pretty safe, the Owl quietly dropped under cover, as he evidently fancied, unobserved by us. Upon this I rushed up the hill, and got a good position on a large rock above the spot where he had sunk to rest, and left my comrade and his noisy juvenile Celestials to follow. As these clambered up the hill, they chatted and laughed, and made a great noise. The Owl, finding them too near, bounced out, and flapped as hard as he could up the ravine, past the rock on which I was sitting, whence I got an easy shot at him, and tumbled him over. The little boys soon scrambled after him, and drew out the magnificent fellow. I was hitherto under the impression that he was *Bubo maximus,* which I have met with at Amoy; but imagine my joy, when, by the naked tarsus, I discovered a totally distinct bird.

He measured 21½ in. in length; wing from flexure 16 in.; expanse about 3 feet 9 inches. Tail 7½ in., somewhat graduated and rounded, the outermost feathers being about 1 in. shorter than the central; the 4th and 5th remiges nearly equal, and longest in the wing. Eye about 1 in. in diameter; iris bright orange-yellow; skin round the eye broad, and purplish brown. Bill pale dingy greenish yellow, blackish on the apical half of the upper mandible, but not so at the tip. Inside of mouth pale fleshy king's-yellow. Tongue broad, fleshy, and notched at the tip. Legs of a dusky yellow, covered with small hexagonal scales, and a few broad scutella at the end of the toes; the soles rough, and covered with pointed asperities; outer toe reversible; claws bluish black, with pale yellowish bases, not much curved, and very blunt from use. Ear oval, $\frac{6}{8}$ in. in length, exposing the internal aperture in the half farthest from the eye. Feathery horns not very large or prominent.

The œsophagus starts from the glottis very wide, gradually narrowing to $\frac{4}{8}$ in., then for $1\frac{1}{2}$ in. becoming only $\frac{3}{8}$ in. in width. The proventriculus follows (length $1\frac{1}{2}$ in., largest diameter $\frac{5}{8}$): gizzard $1\frac{1}{2}$ in. long, somewhat conical, thick and hard; inside lining thick and yellow, with broad rugæ; empty. Cæca situated $2\frac{1}{2}$ in. from anus; right cæcum $4\frac{2}{8}$, left $3\frac{1}{2}$ in. in length, both bulging at their extremities into large sacs. Intestine *in toto* 44 inches long.

10. Scops ——?*. Cantonese, "*Se-chee-ying.*"

This pretty Horned Owl was brought to me alive at Canton, and, from the bareness of its breast and belly, had evidently been caught in the nest. It was very tame, and used to afford amusement to spectators by the odd way in which it lowered its head, swinging to and fro with expanded wing and ruffled feathers, while its disproportionately large dark eyes glared at the finger pointed towards it, and the bill continually snapped. In the daytime, when undisturbed, it remained in easy repose; but at night it flapped about in its place of confinement, and vainly sought hard to force a passage through the bars.

In the spring of 1859, my friend Mr. Holt, at Foochow, sent me two specimens of the same species from that place, but they appeared somewhat larger in size than the present one.

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* Probably *Scops lempiji* (Horsf.), but rather dark in plumage.—P. L. S.

Length $8\frac{1}{2}$, wing 7, tail 3 6 in. Bill pale flesh-grey, with a pale yellowish rim to the mandibles. Eyes very large, about $\frac{8}{10}$ in. in diameter; iris golden burnt-sienna, but so narrow that this colour is seldom visible, the immense pupil filling nearly all the space between the lids. Skin round the eye madder-brown. Ear-conch very large and oval, nearly $\frac{6}{8}$ in. in length by about $\frac{4}{8}$ in width, the lunar-shaped orifice occupying about one-third of the oval on the part distant from the eye; colour of the conch-rim yellowish, inside light blue-grey. Legs feathered to the end of tarsus. Toes naked, light brownish flesh-colour; claws light brownish grey, with blackish tips.

There were numerous eggs in the ovary; oviduct folded zig-zag, semitransparent, and about 4 inches in length, terminating in a distinct cloaca. Proventriculus granulated, somewhat enlarging towards the gizzard, which was flabby and oval, about $\frac{1}{2}$ in. in length by $1\frac{3}{8}$ in breadth, lined inside with a fixed rugose cuticle of a yellow colour. The cæca were long and bulging at their ends, the left longer than the right; but unfortunately I have lost the measurements of these parts.

11. CAPRIMULGUS —— ?

Probably the same species as that procured at Amoy. I did not obtain a specimen. I saw a pair in March, gamboling about the top of Monte Guya, in Macao, just after the sun had set. Mr. Bowring informed me that in the fall of the year they occurred abundantly in Hongkong, and might be seen in numbers every evening hawking after insects in the valley.

12. CAPRIMULGUS —— ?

Our second species, with naked tarsus*. One was shot at Stanley, Hongkong, which was shown to me.

13. CYPSELUS AFFINIS, J. E. Gray.

I saw a small party of these one afternoon at Hongkong; but they do not appear to be permanent residents at any of the *three* places, as at Amoy.

14. HIRUNDO GUTTURALIS, Scop.

A few arrived in February; but in March they were to be found everywhere, and soon commenced building-operations. It is the only and prevailing species. This bird has only *one* small cæcum.

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* This will probably be a *Lyncornis*. *L. cerviniceps*, Gould, is said to be from China.—P. L. S.

15. Eurystomus orientalis (Linn.). Cantonese, "*Leuh-ko-tsoey.*"

I had the pleasure of meeting a pair of these birds at Whampoa (the anchorage of Canton). While wandering under a group of lofty pines, I saw a bird sitting on a branch with head and body erect, while the tail and abdomen, from the shortness of its legs, seemed to lie along the branch. The red bill and brilliant green and blue plumage soon showed me what it was, as it flitted with quick and smooth flight into the open. It was presently joined by its mate, and they kept flying about, now resting on a thick bough, now again on the wing, circling round the clump of trees. They uttered occasionally a note not unlike the "*quack*" of our Goatsucker, which bird it also often resembled in flight, and in its habit of sitting for the most part along a branch instead of across it. They were rather shy of approach; so I had to take them on the wing, and was fortunate enough to secure the pair.

The male was larger than the female, and perhaps a little more brilliant in tints. The gizzard was oval, $1\frac{1}{2}$ in. long, $1\frac{1}{8}$ broad, and $\frac{7}{8}$ thick, slightly muscular, lined with a flesh-yellow moveable cuticle much wrinkled with rugæ, and containing insects—chiefly beetles and large bugs. Intestines somewhat fleshy, 19 in. long, and varying in thickness from $\frac{3}{8}$ to $\frac{1\frac{1}{2}}{8}$ in. Cæca $1\frac{1}{2}$ in. from anus; left $2\frac{3}{8}$, right $\frac{7}{8}$ in. in length, both bulging into black sacs at the apical third of their length.

16. Halcyon smyrnensis (Linn.). Turquoise Kingfisher. Cantonese, "*Fe-tsoey.*"

Common.

17. Alcedo bengalensis, Gmel. Cantonese, "*Tow-yü-long.*"

Common.

18. Ceryle rudis (Linn.). Cantonese, "*Pun-tin-teo.*"

Common.

19. Orthotomus phyllorrapheus, Swinh.

Abundant everywhere.

20. Prinia sonitans.
21. Drymoica extensicauda.
22. Cisticola tintinnabulans.
23. Acrocephalus magnirostris.

All abundant, and evidently spending the summer in the south.

24. Lusciniopsis canturians.

This interesting species of Warbler I first met with in Formosa during March 1855, when I was much struck by the resemblance of its habits to those of the White-throat (*Curruca cinerea*). I have since met with it at Amoy, but I think merely as a straggler. At Shanghai it was abundant, as also at Hongkong and Macao. In the last two places nearly every hedge or cluster of bushes had its *L. canturians*, creeping about unseen, and trolling out its abrupt song. When approached from the midst of its leafy retreat, it gives its alarm-note, consisting of a harsh "*charr*"; and if hard-pressed, quietly slips out the other side of the bush and flits to a further cover.

Bill wood-brown, with the edge of the upper mandible and the whole of the lower pale flesh-colour; inside of mouth chrome-yellow. Iris hazel. Legs pale brownish flesh-colour; claws wood-brown, paling on the soles.

25. Locustella rubescens, Blyth, J. A. S. B. xiv. p. 582 (?).

A Grasshopper-Lark alighted on the deck of the "White Cloud" on our way down the Canton River. It hopped into the saloon close to my feet, and I had the full opportunity of determining its species. It was evidently the same as that once procured at Amoy. I tried to secure it, but there were too many open windows in the saloon.

26. Phylloscopus fuscatus, Blyth.

This little fellow I often observed, and feel sure that some at least nest near Canton.

27. Reguloides proregulus (Pall.).

Very abundant in the fir-trees about Hongkong during February and March.

28. Reguloides chloronotus, Hodgs.

I watched for some time several of the former and one of this species of *Reguloides* pursuing a swarm of gnats in a small pine-plantation at Hongkong. The two birds resembled each other a good deal, and at a distance were not distinguishable; but as they were much busied with their occupation, I approached within a few paces. In the midst of their pursuit they would frequently give utterance to the melancholy protracted note "*sweet*," somewhat sharply emitted. But the *R. chloronotus* at times stopped, and, ruffling his feathers, struck up a little musical ditty not unlike that of the Willow-Wren (*Sylvia trochilus*). I could observe no difference in the common note of the two birds. The abundance of food in this particular spot no doubt was the cause of the large numbers of these birds to be found there; for on ordinary occasions you rarely meet with more than one of the *R. proregulus* at a time, or a pair of the *R. chloronotus*.

29. Copsychus saularis (Linn.). Cantonese, "*Chuy-se-tsa.*"
Common at Canton and Macao.

30. Pratincola indica, Blyth.
Common. Seen in Hongkong as late as March.

31. Ruticilla aurorea, Pall.
A few seen.

32. Ruticilla, sp. nov.?

I mentioned in my "Ornithology of Amoy" the fact of a second species of *Ruticilla* occurring at times in that place. In Hongkong I had the good fortune to meet with several of them. For a few days in the first week of March they were pretty abundant in the hills around the valley; but after that they were not seen, so that they were evidently on their migrations. I procured two pairs, which I forward for Mr. Sclater's examination*.

In fresh examples the bill and legs were black in both sexes; the iris deep blackish brown. The inside of the mouth was blackish flesh-colour in the male, and pale flesh-colour in the female. The tongue was ciliated at the end.

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* These specimens are scarcely distinguishable from *Pratincola ferrea* (Hodgs.) of Upper India. I do not consider them different.—P. L. S.

These birds were fond of perching on the tops of bushes, where they would stand in very upright positions, often darting into the air to seize an insect, or to take up some worm or beetle from the ground. Their actions were all quick, and almost instantaneous. The tail was rarely moved, and then up and down slowly, or occasionally thrown up with Robin-like motion. This simple fact I think is sufficient to show that this species is not a typical Redstart, though it assimilates to that genus in the red tail and brown plumage of the female. The thick bill and grey plumage of the male, however, would perhaps show its tendency to the *Saxicolæ*. Its ordinary note is a subdued kind of rattling noise; but I have heard one, that stood still for several minutes at a time, keep on emitting at intervals a loud sharp note approaching to the syllable "*pew.*"

33. LARVIVORA —— ? ——*

I send a wretched specimen of this bird, the only one I could procure. I have never met with it anywhere but at Macao, where it is not uncommon in wooded spots, hopping about on the ground amongst the undergrowth, and hence very difficult to shoot. When I first heard the note, I could scarcely believe it to be that of a bird, so like was it to the single chirp of the grasshopper; but, creeping on my hands and knees into the thicket, I got a view of the little fellow hopping about, and looking much like a Robin. He would sometimes shake his tail up and down; at others he would throw it up, expanding and closing it. When two of them came together, the sibilant note was repeated more hurriedly and loudly, and then much resembled the chirrup of a shrew mouse.

Bill leaden brown, paler on the edges. Inside of mouth pale flesh-yellow. Legs and claws pale flesh-colour. Iris deep brown.

34. PARUS MINOR, Temm. Cantonese, "*Pak-pay shew-low.*"

Common everywhere; but the individuals appear to be somewhat larger than those at Amoy, and are in most cases *quite* grey on the back, a few only having a greenish-yellow tinge. I can see no further difference to justify a separation; but there seems a strong tendency towards *Parus cinereus* of Java.

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* This specimen appears to me to be a young bird of *Erythacus akahige* (Temm.), Fauna Japon. pl. 21 *b*; and Mr. Gould is of the same opinion.—P. L. S.

35. Zosterops japonicus, Temm. Cantonese, "*Sheong-shee.*"

An abundant resident at Hongkong, where it may constantly be seen, roaming from tree to tree along the roads in small parties. Its well-blended tints of yellow and green, and the snow-white ring that encircles its sharp black eyes, may be seen to advantage by the observer that stands under the tree whereon these sprightly little fellows are exploring the twigs and leaves for small insects. On the 2nd of April I had the good fortune to discover its nest at the end of a bough of a large-leaved tree. It was attached to several leaf-stalks about 8 feet from the ground, and might at first sight have been mistaken for some insect's nest. It consisted of a small cup, composed of delicate grasses, spider's-web, and moss, and resembled much the nest of a Humming-bird. This pretty little structure contained two clear white eggs, one of which was slightly punctured. The nest and eggs I enclose to Mr. Sclater.

36. Motacilla boarula, Linn.

I frequently saw this bird, and from meeting individuals with food in the mouth, I feel sure they breed in Hongkong. A male and female, procured in summer plumage, I transmit for comparison with the European bird*.

37. Motacilla luzoniensis, Scop.

This bird was pretty abundant in February; and in March I witnessed the assembling of immense flocks on the tops of the houses, evidently preparing for migrating. A few weeks later they had all gone.

38. Motacilla ocularis, Swinh.

A resident species. I enclose a male in complete summer plumage for comparison with the Indian species of the Pied Wagtail group. It greatly resembles *M. lugubris*, but the *grey* back in summer is a sure distinction.

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* These examples do not appear to differ from the European *M. boarula*. —P. L. S.

39. Budytes flava, Linn.?

Several of these were feeding in some freshly-ploughed fields at Macao. I could only secure one, and am still in great doubt as to the exact species to which it belongs.

40. Anthus thermophilus, Hodgs.

Very abundant.

41. Anthus agilis, Sykes.

Numbers of this lively species are constantly to be met with among the grass and underwood beneath the small pine-trees at Hongkong. As you stroll through a plantation of these firs, the little fellows spring up with a note "*see*" (strongly sibilant), and with a curved flight alight on the branches above, on which they walk up and down, often uttering their note and shaking the tail. Each step you take puts up one at least, and as soon as you have passed, they drop quietly on to the ground behind you, and resume their pursuit of food.

42. Anthus richardi, Vieill.

A few spend the summer in the south.

43. Myiophonus cæruleus (Scop.).

In the solitudes of the rocky ravines at Hongkong this bird may often be seen. It is very shy, and loves to stand for hours in the cavernous retreats afforded by the large black rocks that lie in massive confusion along the gullies or water-courses on the hill-sides. If you wish to see the bird, you have only to go to some solitary part of the valley, and, seating yourself on a rock, keep quite still for a few minutes. You are sure soon to see a Cavern-bird make his appearance on a rock near you. He at once spies you, and, flying off to a safer distance, appears to advantage on a neighbouring boulder. See! he runs up it; and, leaning his body forward on his long black legs, he keeps raising and depressing his tail, at the same time opening and shutting it in a shuffling manner. He then darts, with a single sharp note approaching a scream, among the leaves of a bush, the deep purple and blue of his plumage glistening in the sunlight. He has seized a caterpillar, and returns with it in his bill to the rock, whence he eyes the intruder on his solitude, while he beats and devours his capture. He is then lost to view beneath the bushes under which he has just flown to search for earth-grubs. You watch on. Presently you see him emerge some distance up the hill, and darting with a straight flight, and screaming along the rocks, he disappears among them, where

> "Speluncæque tegunt, et saxea procubat umbra."

44. Geocichla, n. sp.

The only specimen of this bird met with was at Whampoa, on the 18th of April. It was feeding on the ground, and on being disturbed, flew up to a tree with undulating flight, looking much like a *Campephaga*. The bill and legs were black; iris dark brown. General plumage smoke-grey, with a white belly and a distinct white eyebrow. I send the bird for Mr. Sclater's inspection*.

Gizzard heart-shaped, $\frac{7}{8}$ in. long by $\frac{5}{12}$ deep, somewhat muscular, with a moveable yellowish rugose epithelium, containing the remains of insects. Cæca $\frac{1}{2}$ in. from the anus; right one $\frac{1}{2}$ in. long, left $\frac{1\frac{1}{2}}{8}$.

45. Turdus daulias, Temm.

46. Turdus pallens, Pallas.

47. Turdus chrysolaus, Temm.

48. Turdus cardis, Temm.

These four Thrushes were seen in February and March, and appeared to be merely passengers.

49. Turdus —— ?

A species of Redwing, with grey-olive back in the male and orange-tinted flanks. Abundant, especially in Camoëns Garden, Macao, where they were nesting. I have occasionally met with them at Amoy; but, unfortunately, during my ramble in the south I managed to procure only a female. I enclose the bird for Mr. Sclater's inspection†.

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* This bird is *Turdus sibiricus*, Gm., in nearly adult male plumage.—P. L. S.

† Evidently the young of the preceding (*Turdus cardis*), in the stage figured in the 'Fauna Japonica,' tab. 30. It agrees in structure com-

50. Turdus mandarinus, Bp. Cantonese, "*Woo-yay.*"

An abundant resident. Its sweet melody enlivens all the gardens. The male and female greatly assimilate, and in this respect differ much from the European Blackbird. Both sexes have yellow bills in the summer; but the plumage of the female is browner than that of the male. It builds chiefly on the boughs of the Banyan (*Ficus nitida*), making a nest scarcely distinguishable in aspect from that of the *T. merula*.

51. Petrocossyphus manillensis (Bodd.).

Numerous about the rocky hills.

52. Garrulax perspicillatus (Gmel.). Cantonese, "*Sampalow.*"

Frequents clumps of bamboos, where it chatters and makes a great noise, often bursting out into the loud notes "*teo-teo*," which appear to be the call from one to the other, and can be heard at a long distance. It is a great enemy to the eggs and young of small birds, and in habits approaches somewhat the Jays.

53. Leucodioptron canorum (Linn.).

This is the "*Hwa-mei*" or Song-Thrush of the Chinese. Mr. Blyth tells me that the true *Garrulax sinensis*, Linn., is from the Tenasserim Provinces. A few "*Hwa-meis*" may constantly be heard singing among the bushes on the almost precipitous sides of the lofty hills of Hongkong.

54. Oriolus chinensis, Linn. (*O. acrorhynchus*, Vig.) Cantonese, "*Wong-yang.*"

This Oriole occurred plenteously at Canton, and, from comparison of specimens, I find that both sexes vary considerably in size, in the height of the culmen of the bill, and in the extent of the yellow and black on the wings and tail, hence affording satisfactory proof of the identity of the two species, *O. sinensis* and *O. acrorhynchus*. I send specimens of both the supposed species for comparison*.

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pletely with a male *Turdus cardis* in Mr. Gould's collection. It will be interesting to know if these birds really breed in this plumage.—P. L. S.

* Mr. Swinhoe's ten specimens all appear to be referable to one species—without doubt the true *O. chinensis*. But it is still necessary to examine

55. PYCNONOTUS OCCIPITALIS, Temm. Cantonese, "*Pak-taou long.*"

An abundant resident.

56. PYCNONOTUS CHRYSORRHOIDES (Lafr.).

These are of a more roving disposition than the foregoing, and may often be met with in small parties on the hills, flying one after another from bush to bush. They have a loud chattering note, uttered while roving about; but the male at times, seated quietly on a branch, gives vent to a succession of sweet notes, some of which are very rich and full. I observed numbers of these Bulbuls, as well as the preceding, on the Tallow-tree (*Stillingia sebifera*), feeding on its ripe berries.

57. PYCNONOTUS JOCOSUS (Linn.).

This is evidently the same bird as that found in Bengal, and is described as *Turdus sinensis* in Shaw's 'Zoology,' from a Chinese drawing. It is not found in either Hongkong or Macao, but is very abundant in the neighbourhood of Canton, where numbers of them were to be seen in April, springing about over the large red flowers of the gigantic leafless *Bombax malabaricum.* They were at once to be distinguished by their peculiar voices; but their lofty curled and pointed crests gave them a very marked appearance.

58. TCHITREA PRINCIPALIS (Temm.).

This bird I cannot help thinking is not *T. principalis,* but a distinct species *. A female that I sent home on a former occasion was pronounced by Mr. G. R. Gray to belong to the Japanese species, but the females in all the species I have seen assimilate in a most remarkable manner. The male I procured in Hongkong I enclose. This is the fourth male I have seen, all resembling one another, and differing from the description in the 'Fauna Japonica.' The male in that work is thus described :—

'Les plumes du ventre et les couvertures inférieures de la queue

---

examples from the Philippines, as the bird described as *O. acrorhynchus* by Vigors (P.Z.S. 1831, p. 97) was from that locality.—P. L. S.

* I consider this to be the true *T. principalis*, but I have no Japanese specimens for comparison.—P. L. S.

sont blanchâtres, mais elles passent au noirâtre vers leur base. Toutes les autres parties de l'oiseau sont d'un noir de velours profond à reflets bleuâtres, et passant au noir-violet sur le dos et les ailes"—whereas the back of our bird is of a burnished pink-purple.

Iris dark blackish brown. Eye-skin and bill fine cobalt-blue, the latter with black tip. Legs violet-blue, with blackish claws. Gizzard roundish and somewhat flattened, $\frac{1}{2}$ in. in diameter, with a fixed rugose cuticle; containing remains of diptera and coleoptera. Intestine $6\frac{1}{2}$ in. in length; right cæcum $\frac{7}{8}$ in. from anus, the left $\frac{1}{10}$ higher, both about $\frac{1}{10}$ in. long and adnate, of an oval shape.

It is a grand sight to see this bird sitting upright on a branch, with its two tail-streamers hanging down, and quivering with the slightest breeze; but to see it spring on wing, and mark the whirling motion of the two long feathers, now coming together, now separating widely, and spinning in different directions as the bird skirmishes in the air, is truly a magnificent sight. They seldom dart out far on the wing, but keep a good deal within the limits of a large tree's branches. I have watched a pair of females engaged in the capture of insects. They stood very upright on the branch, with the tail almost horizontal, and leaping a little way into the air, would catch the fly and skip with it to another branch, seldom returning to the one they started from.

The yearling has the bill and legs brownish, the blue of the eye-skin being more or less sullied. I am told that white varieties occur near Canton.

59. HEMICHELIDON LATIROSTRIS (Raffles)*.

Very common.

60. HEMICHELIDON FERRUGINEA, Hodgson†.

I only saw this once. I enclose the specimen for Mr. Sclater's examination.

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* This seems to be *Musicapa cinereo-alba* (Temm.) of the 'Fauna Japonica.'—P. L. S.

† Agrees well with Indian examples of this bird in Mr. Gould's collection.—P. L. S.

61. XANTHOPYGIA NARCISSINA (Temm.). Cantonese, *"Tsoey fa chay."*

Common about Canton. They often fly down to the ground or skim along its surface in the pursuit of an insect. In the various evolutions of flight, the bright golden colour of the rump and throat shows to advantage. I procured a female for the first time, and was surprised to find how much it differs from the male.

As the male only is figured by Temminck, I here give a sketch of the female :—

Bill, upper mandible black, lower bluish grey. Legs pale violet-grey. Iris dark. Inside of mouth pale yellowish flesh-colour. Upper parts obscure olive-green, with a blackish olive patch on each cheek. Wings and tail hair-brown, the former margined with paler. Some white feathers occur on the shoulder ; and the rump-feathers have whitish bases. Throat and indistinct eye-streak orange-yellow. Breast dingy olive-yellow. The remaining under-parts washed with ochreous.

Length 5 in., expanse 7½, wing 2⅞, tail 2.

62. NILTAVA CYANOMELÆNA, Temm. Cantonese, *"Moey fa tsoey."*

A few of these occurred in Hongkong in April, but in Canton for the first fortnight in that month they were remarkably abundant near the city walls. Almost every mound or grave-stone had its Blue Bird standing erect, on the look-out for the passing insect. I was much struck with the appearance of a brown bird, of similar habits and seen in similar positions. This I found to be the female of the blue,—the one I shot having an almost uniform olive-brown plumage. But a single blue feather on the crown of the head convinced me of the identity of the birds, before I had the opportunity of determining the sexes by dissection.

As the male only has been described in the 'Fauna Japonica,' I here extract from my journal the description of the female :—

Bill blackish brown. Legs greyish brown. Iris dark brown. Inside of mouth yellowish flesh-colour. Upper parts olive-brown ; rump redder ; tail fringed with reddish brown. Wings brown, margined with reddish olive. Throat buff. Breast and axillæ olive, tinted with buff. Belly and vent white, touched with the same colour.

Length 6 in., wing $3\frac{6}{8}$, expanse 9, tail $2\frac{1}{2}$.

Testicles in the male small and *black*. Gizzard roundish, $\frac{5}{8}$ in. in diameter, lined inside with a moveable rugose cuticle of an ochreous colour, and containing for the most part small beetles, most of which were unbroken. Intestines thick and fragile, with *no* cæca.

63. CAMPEPHAGA —— ?

This bird is occasionally seen at Amoy. I first met with it at Macao on the 21st of March, where its loud notes, repeated at intervals, attracted my attention. It was singing in a bush, but on being disturbed flew up to the branch of a tree, whence it continued to pour forth its notes. At Canton it was not uncommon. The immature bird is indistinctly barred on the under parts, the tints are much lighter, and a broad white bar occurs across the wing, visible when the bird flies. In this last characteristic of the immature dress this species approaches the *Pericrocoti,* which in most cases have a white under-wing band.

Mr. Blyth ignores the name which I have applied to it. I must therefore leave the identification of the species to Mr. Sclater; and I think it is very probable that it will prove new *.

64. PERICROCOTUS CINEREUS (Lafr.).

This bird visited Hongkong in small flocks during the first week in April, when I was enabled to procure a nice series of males. A little later in the same month I saw a small party of them at Canton; but I am convinced that they were migrating, and merely passing over.

65. PERICROCOTUS CANTONENSIS, n. sp.

A smaller species than the preceding, and evidently resident at Canton. I send a male and female for Mr. Sclater to examine and describe, and merely confine myself to the notes in my journal.

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* This bird is a close ally of *Volvocivora lugubris* (Sund.) of India and *V. fimbriata* (Temm.) of Java, which, I suspect, is distinct from the Indian bird. The single specimen sent appears to agree best with the description of *V. melanoptera* (*Campephaga melanoptera*, Blyth, J. A. S. B. xv. p. 307), from Arracan.

Length $7\frac{2}{5}$ in.; wing $2\frac{1}{2}$, tail $3\frac{6}{8}$, expanse $9\frac{2}{5}$. Bill and legs black. Inside of mouth flesh-colour. Eyes hazel. Gizzard roundish, muscular, and much flattened, lined with an adherent rugose cuticle of a brownish-yellow colour; containing remains of caterpillars. Testicles white, and elongo-ovate, $\frac{5}{12}$ in. long; the left one longer than the right. Intestine rather thin; cæca $\frac{1}{4}$ in. from the anus, about $\frac{1}{12}$ in. long*.

66. Dicrurus macrocercus, Vieill.

This bird occurs, but not abundantly. Formosa is the only place where I have seen it in any abundance.

67. Lanius schach, Gm. (Sparrow King.) Cantonese, "*Ma chow wong.*"

Very numerous everywhere. The bird in the south is smaller, and less rufous on the rump, than that at Amoy, and I dare say goes on decreasing in size towards the Straits, whence I have seen very diminutive varieties.

68. Lanius lucionensis, Linn.

Passing over. I observed two one morning at Hongkong.

69. Corvus pectoralis, Gould.

Common. The black species which occurs at Swatow and Foochow, and which Mr. Blyth tells me is *C. sinensis* of Gould, I did not see once at Canton.

70. Pica sericea, Gould.

Common everywhere.

71. Urocissa sinensis (Linn.).

These handsome birds are often to be seen about the woods at Hongkong. You see a long-tailed form flying over the low trees with a direct flight, executed by short constant flaps, like that of a Magpie, the tail being held in nearly the same horizontal line as the body. The first disappears into a thick leafy tree, and is followed by a second, then a third and fourth, and sometimes more. Presently one shows himself on an exposed branch above, stretching out his red-billed head and whisking impatiently his two white-tipped tail-streamers. He sees you watching him, and at once sets up a cry of "*pink-pink-pink,*" followed by a loud chatter, in which his comrades join, and you catch glimpses of violet and blue as they hasten from one tree to another in a contrary direction, until the distant sound of the "*pink-pink*" note tells your ear that the Redlegs are far through the woods.

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* This is certainly distinct from *P. cinereus*; but I rather doubt Mr. Swinhoe's male bird being in full plumage. The female shows a distinct yellowish bar on the wing. This ought to be red in the male by analogy, but is white. I should like to examine further specimens before describing it.—P. L. S.

72. Acridotheres cristatellus (Linn.). Cantonese, "*Lent ko.*"

Very common. I dissected a female. Gizzard oval, about 1 in. long, $\frac{3}{4}$ broad, and $\frac{1}{2}$ deep; somewhat muscular, containing chiefly coleoptera; the inside was lined with a moveable cuticle, longitudinally as well as transversely furrowed. Cæca: left $\frac{5}{10}$ in., right $\frac{4}{10}$ in. in length. Around the intestines occurred several tape-worms (*Tænia*), the longest $1\frac{1}{4}$ inch, and about $\frac{1}{8}$ in. broad; whitish, and of nearly the same width to the end of the tail. The head was leech-like, and kept changing its form by its expansive and retractile power, at one time looking like a ball, then lengthening into a spatula,—then, the lip being drawn back, resembling a thistle-head. These curious little creatures lived some hours in water.

73. Gracupica nigricollis (Paykull).

Somewhat rarer here than at Amoy.

74. Temenuchus turdiformis (Wagler). Cantonese, "*Fooey gang.*"

I first observed it in April, when large flocks of them arrived at Canton, and were to be seen on almost every tree. Is it found in summer also in Pegu? It is abundant at Amoy in summer, but its migrations do not extend so far northward as Foochow.

75. Temenuchus sericeus (Lath.).

76. Temenuchus cineraceus (Temm.).

I observed flocks of both these on the main opposite Hongkong during February.

77. Coccothraustes melanurus (Gmel.).

Very abundant about Canton; evidently breeds there in great numbers.

78. Munia malacca (Linn.).

Flocks of these were observed at Macao and Whampoa.

79. Munia minima (Lath.). Cantonese, *"Wo-kook."*

Very abundant. Most of the court-yards throughout the city of Canton have this bird nesting in their trees. The little fellows whisk about their pointed tails most vigorously, and utter their call-trill when you draw near their nesting site. The nest is a round domed construction of grasses and roots, not unlike that of a Wren, and generally contains three white eggs.

80. Munia rubronigra (Hodgs.).

I almost doubt whether this is a Chinese bird, as I have never yet met with it in a wild state. It is occasionally to be seen in cages, but I think comes from the Straits.

81. Munia oryzivora (Linn.).

Wild at Hongkong during the early spring.

82. Ligurinus sinicus (Linn.). Cantonese, *"Kum sheong shee."*

Abundant.

83. Passer montanus (Linn.).

Found everywhere.

Several other Finches were offered for sale in the Canton bird-shops, all of which the dealers said came from Northern China; and this is not improbable, when we consider that such birds as *Loxia recurvirostra*, *Fringilla montifringilla*, and *Passer russatus* were among the number. They are brought down in numbers for sale by the Tien-tsin junks, that make half-yearly passages southwards. At all events, as I have never seen these birds in the open country, it is needless to swell my list with their names.

84. Emberiza fucata, Pall.
85. Emberiza personata, Temm.
86. Euspiza aureola (Pall.).

All more or less common, and, I think, resident.

87. Euspiza sulphurata (Temm.).

Seen once at Hongkong.

88. Melophus lathami (Gray). The Macao Sparrow of Shaw's 'Zoology.'

In excessive numbers about Hongkong and Macao. The males are at least two years in completing their mature dress.

89. Alauda cœlivox, Swinh.

Common in all open country that abounds in corn or pasture land; specially abundant near Macao.

90. Picus major? Cantonese, "*Shü-kai*" (Tree-fowl).

This male specimen, which looks very like the European species, was brought to me alive at Canton. On a previous occasion I received a pair from Mr. Holt at Foochow. The one now enclosed to Mr. Sclater measured, when fresh, 9$\frac{2}{8}$ in.; wing 5$\frac{1}{8}$, tail 3$\frac{1}{2}$, expanse of wing 14$\frac{1}{2}$. Bill along culmen 1$\frac{1}{8}$ in., from point to commissure 1$\frac{1}{2}$; of a deep lead-colour, lighter on the gonys and at the base. Inside of mouth flesh-coloured. Legs and claws deep leaden. Irides brownish carmine*.

Testicles over $\frac{1}{2}$ in. long, oval, and pure white; left one rather longer. Gizzard heart-shaped, not muscular, $\frac{7}{10}$ in. long; epithelium fixed, with close longitudinal rugæ; containing remains of beetles and minute pieces of rotten wood. Intestines 10 in. long, rather thick, with no cæca.

91. Cuculus tenuirostris, Gray. Cantonese, "*Pun-tow-shooey.*"

Very common and noisy in the city of Canton.

92. Eudynamys orientalis (Linn.). Cantonese, "*To-keun.*"

A figure occurs in Shaw's 'Zoology,' 1815, vol. ix. pt. 1. p. 103, under the term "*Cuculus mindanensis,*" which is undoubtedly the *female* of the Canton bird; but it is marked "*male,*" and its locality given as the Philippines, Cape, and Coromandel coast.

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* This specimen agrees well with the bird figured by Mr. Gould in his 'Birds of Asia' as *Picus cabanisi*. According to M. Malherbe, however, this species is not his *P. cabanisi*, but *P. gouldi*. See Monogr. Picid. pl. 17. p. 62; but the distinctions between *P. cabanisi*, *P. mandarinus*, and *P. gouldi*, as there given, seem rather fine. We certainly doubt the fact of three species so nearly allied occurring in one country.—P. L. S.

The loud notes of this bird first drew my attention to it in the city of Canton. I was told that this noise-producer was called the "Summer Bird" among the European residents, from its arriving at the commencement of the hot season. Its note may be syllabled *"cō'-ō'-ah,"* pronounced loudly and with stress, which it keeps on repeating, the loudness and vigour increasing every time, until the sound suddenly stops. On hearing the call, you have only to look to some well-exposed tree or branch, and you are almost sure to see the bird; but it seems to prefer the leafless top branches of the gigantic *Bombax malabaricum,* where its large black form is plainly visible, bending forward and stretching its neck while the startling notes are emitted. If approached too near, the bird flies off with a *straight* flight,—looking, however, in form much like a Drongo Shrike. One that I was watching flew off to another large tree in which there was a Magnal's nest, and close to the nest a brown bird much like himself in form. The brown bird turned out to be the female, and set up a chattering noise on the arrival of her mate. She very probably had dropped, or had come to drop, an egg into the nest; for the Magnal (*Gracupica nigricollis*) soon returned to the tree, and seeing strangers so near his abode, charged them. The Magnal, however, was defeated and driven off, and the Cuckoos remained victorious. I was fortunate enough to procure a pair, which I enclose; but the bird was by no means uncommon, for I have heard no less than *three* males calling within ear-shot of one another.

Male.—Length 15¼ in.; wing 7½; tail 7½, with ten feathers. Bill pale bluish grey, becoming pale yellowish towards the tip. Inside of mouth flesh-colour. Iris clear carmine. Legs lead-colour, greyish at the joints and on the soles. Whole plumage greenish black.

Female.—Length 15 in.; wing 7½, tail 7½, expanse 19½. Bill pale greenish ochre, varied with brown. Inside of mouth flesh-colour. Iris reddish brown. Legs leaden blue; soles yellowish grey; claws brownish grey. Tail a good deal worn and jagged at the ends and sides of the feathers, proving to a certain degree that it is to the round domed nests of the Magnals (*Gracupica nigricollis* and *Acridotheres cristatellus*) that this bird chiefly resorts to deposit her eggs.

Tongue fleshy, sagittate, horn-edged and rounded at the tip; basal half papillose, more conspicuously at the edge. Ear-conch moderate, nearly circular, with a lunate recess on the part furthest from the eye,—the inner edge of the ear and the outer angle of the eye being within the same plane. The eggs in the female were well developed, and some ready to drop; the oviduct was large, measuring in length $5\frac{1}{2}$ in., and in diameter $\frac{3}{8}$ in., formed of a thick white elastic membrane, folded zigzag, and enlarging into a distinct cloaca.

The male had white oval testicles, about $\frac{1}{2}$ in. long. Proventriculus granulated, and narrowing as it joins the gizzard, which is somewhat ovato-circular, $1\frac{2}{8}$ in. long, well flattened, flabby, and capable of much extension: its interior cuticle moveable, nearly smooth, and of a pinkish colour, containing wild *figs*. Intestine 17 in. long, varying in thickness from $\frac{2}{8}$ to $\frac{7}{8}$. Cæca given off 2 inches from the anus, the one $\frac{7}{8}$, the other 1 in. in length, very thin, and of uniform size throughout.

93. Centropus —— ? (*C. lignator*, nobis.)

This small species, in mature plumage, I first met with in Kelung, Formosa. One was afterwards shot at Amoy, in immature plumage; and in Hongkong I again fell in with the immature bird. Its "*hoo-hoo,*" with the sounds "*kă-toch, katoch,*" that immediately succeed, may often be heard on the bush-clad hill-sides of Hongkong. I enclose all three specimens for Mr. Sclater's inspection, as it strikes me the species is probably new*.

Here is a note on the one procured at Hongkong:—Bill pale yellowish brown, with a tinge of pink; culmen blackish brown. Inside of mouth pale flesh-colour. Iris ochreous, and eyelid pale ochreous. Naked skin round the eye bluish. Legs a violet lead-colour, with yellowish soles and edges to scutes. Proved to be a female on dissection. Gizzard lined with a moveable cuticle, containing several large *hairy* caterpillars of a species of brown moth.

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* This small *Centropus* seems not different from *C. affinis*, Horsf., of Java, Malacca, and India.—P. L. S.

94. CENTROPUS SINENSIS (Steph.).

This large and handsome species, so common in Foochow, is also abundant in the south; and one seldom visits the Happy Valley without being struck by its strange "*hoo-hoo*" resounding from the hills around. It is, however, a difficult bird to get a view of, being timid, and crouching in cover when approached. Like the foregoing small species, it is upwards of *three* years attaining to mature plumage,—during that time scarcely two specimens being found with the same markings. I procured a fine female in a wood on the other side of the island, near the village of Little Hongkong, on the 3rd of April. The eggs were largely developed, and evidently within a few days of being laid. Proventriculus 1⅜ in. long, narrowing immediately before the gizzard, which is circular, somewhat flattened, flabby, and thin-skinned, lined with a thin, smooth, separable cuticle, and containing the remains of grasshoppers chiefly. Intestines 32 inches long; right cæcum 4 in., left 3¾, both bulging at their extremities. Oviduct long, and folded zigzag, being formed of a broad white elastic membrane terminating at the anus.

Besides the ordinary note, this bird sometimes utters a loud chuckle somewhat like the sound produced by pouring water from a bottle.

95. TURTUR ORIENTALIS (Lath.).

On the way down to Hongkong, a party of friends left the steamer for an afternoon's shooting at Swatow, and among the birds brought back was one of this species. I afterwards saw a pair early in March on the main near Hongkong.

96. TURTUR CHINENSIS (Scop.). Cantonese, "*Pan-kaou.*"

The prevailing species. *T. humilis* did not occur, which is strange, considering how abundant it is from Hongkong to Shanghai during the summer months.

97. PHASIANUS TORQUATUS (Gmel.).

Found in the neighbourhood, and sometimes on the island of Hongkong itself.

98. Francolinus perlatus (Gmel.).

This bird is numerous in Hongkong, inhabiting the patches of bushes and fern that so frequently occur in nooks and depressions on the hill-sides, whence it is very difficult to flush it, even with a good dog. If you mark a bird down, you are by no means sure of putting it up again. It is a solitary bird, and does not associate in coveys. In the early mornings of April, and during the greater part of the day, if cloudy, you may hear them crying to each other on the hills around that enclose the Happy Valley. One male starts the song "*ke-kai, ke-kai, ka-karr,*" another on an adjoining hill defiantly repeats the notes; a third, still further, is heard, and even a fourth, until the notes are lost as it were in a distant echo. The first bird then commences again, adding greater emphasis to the last note, and the other birds take up the song in succession as before. When heard near, these notes sound harsh to the ear; but at a distance they have a pleasant, wild effect as they sweep over the sides of the towering hills. The flesh of this Francolin is white and insipid.

99. Coturnix dactylisonans, Temm.

Common; but, I think, merely as a winter visitant when corn takes the place of rice in the fields. Numbers are captured and brought to market in baskets; the best males being first selected, and confined separately in straw bags, for pugilistic purposes. For the table, they sell at 4*s*. or 5*s*. the dozen; but the warlike individuals fetch 1*s*. or 2*s*. apiece.

100. Coturnix chinensis (Linn.).

This diminutive and prettily-marked species is found in the neighbourhood of Canton, to which city it is carried singly or in pairs, and offered for sale in cages. It is by no means common, and is much esteemed as a cage-bird.

101. Turnix joudera, Hodgs.?

This a good deal resembles the bird figured in Gray's 'Genera of Birds' with the above name, but is rather larger. You find it occasionally in the Hongkong markets mixed up with Quails, from which it is distinguished by Europeans by the name

"Button," or "Button-Quail." I have seen it occasionally in the possession of natives at Amoy.

102. Squatarola helvetica (Gmel.).

Occurred during February, but not afterwards. One kept in an aviary at Amoy appears to have undergone no change in plumage as late as the end of May. Is this merely attributable to the effect of confinement on the bird's constitution; or is this race in any way separable from the European one?

103. Charadrius virginicus, Bork. Cantonese, "*Mapaw-chuy.*"

A common bird near Canton; passes the summer there. The females do not appear to undergo so complete a moult as the males.

104. Ægialites cantianus (Lath.).

Common during February. The majority migrate northwards.

105. Ægialites pusillus (Horsf.).

Common about Hongkong in the rice-fields. Many stay to breed.

106. Ægialites geoffroyii (Wagl.).

A large species: shot once at Amoy. One was shown to me that had been procured from a flock on the main opposite Hongkong.

107. Ardea cinerea, Linn.

Frequently seen.

108. Herodias egretta? Cantonese, "*Pak haw*" (White Crane).

These birds are found in the neighbourhood of Canton, and are brought alive to market, where they may often be seen standing at some shop-door, the primary quills twisted together into a knot, and the eyes blindfolded by a feather passed through the underlid of each eye and tied over the head. They are called by Europeans "White Cranes." I procured a pair, which I send for Mr. Sclater's inspection*.

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* They seem to be *H. intermedia* (Wagler). See, for synonyms, Blyth's Catalogue, p. 279.—P. L. S.

	Length.	Wing.	Tail.	Bill.	Tip of bill to eye-angle.	Naked tibia.	Tarsus.	Mid-toe:	its claw.
	in.	in.	in.	in.	in.	in.	in.	in.	in.
Male......	$37\frac{1}{2}$	15	6	$4\frac{1}{2}$	$5\frac{1}{2}$	5	$6\frac{5}{8}$	$4\frac{2}{8}$	$\frac{6}{8}$
Female...	35	$13\frac{1}{2}$	$3\frac{1}{2}$	4	$4\frac{6}{8}$	$3\frac{6}{8}$	$5\frac{7}{8}$	$3\frac{7}{8}$	$\frac{5\frac{1}{2}}{8}$

Bill blackish brown; base of *culmen* and *gonys* brownish yellow, gradually yielding to the bright chrome of the cere, which tends to greenish in the region of the eye. Iris king's-yellow. The *tibia* of the male is madder-brown on the highest part; but this colour, as it descends, soon yields to the blackish brown which prevails throughout the remainder of the legs and claws.

In the female the yellow on the face is paler, and the tibia pale flesh-brown with a green tinge, which extends as far as the upper portion of the tarsus.

109. HERODIAS GARZETTA (Linn.).

Common.

110. BUPHUS COROMANDUS (Bodd.).

Common.

111. BUTORIDES JAVANICA (Horsf.). Cantonese, "*Shuy haou haw.*"

Met with near Canton. A male specimen in fine plumage was brought to me by a Chinese. Its bill was black, with an ochreous gonys; lore yellowish green. Iris clear yellow. Legs yellowish sea-green on the upper surface, bright orange-ochre on the soles and under surface; claws dark brown.

112. ARDEOLA PRASINOSCELES, Swinh.

Of frequent occurrence. A male was brought to me at Canton, and I enclose it for Mr. Sclater's inspection, and for that gentleman to pronounce if he does not really think it distinct from *A. leucoptera* and *A. speciosa**. The bill of this specimen was beautifully tinted with yellow and blue. Legs a fleshy yellowish, yellower and tinted with greenish on the toes; claws brownish.

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* I consider it to be *A. speciosa* (Horsf.). Mr. Blyth observes, in reference to this species, in a letter to Mr. Gurney, "It is curious that the Squacco Heron of Africa (chiefly), the *A. leucoptera* of India, and the *A. speciosa* of China, the Philippines, and Java, are so similar in winter dress as hardly (even if at all, with absolute certainty) to be distinguishable, yet in summer garb their colouring is most strikingly different."

The gizzard was of moderate size, and shaped like a bottle, containing the remains of small *crustacea*. The testicles were oblongo-ovate, and measured, one 1 inch, the other ½ inch in long diameter. Curled in the intestines was a worm-like *Ascaris*, 1¼ in. long; and from off the skin under the feathers I picked a tick (*Ixodes*), about 3/12 in. in diameter, with very thin red-brown feet and white, berry-like body.

113. ARDETTA CINNAMOMEA (Gmel.). Cantonese, "*Fawhaw.*"
Common.

114. ARDETTA SINENSIS (Gmel.). Cantonese, "*Wong gawhaw.*"
Common.

115. NYCTICORAX GRISEUS (Linn.). Cantonese, "*Moon-shóó haw.*"

This is the sacred bird of the great Honam Temple, Canton. The court-yard in front of this temple contains some venerable banyans, as well as a few towering cotton-trees (*Bombax malabaricum*). On the higher branches of the former the small flat wicker-nests of the Night-Heron may be seen in all directions, some only a foot or so from others; and the croaking and flapping and fighting that goes on overhead bears some distant resemblance to the crowded deck of an emigrant steamer on first encountering a turbid sea. The granite slabs that form the pavement beneath these trees are so bedaubed with the droppings of old and young, that permission to scrape them clean daily might prove a fine speculation for the guano-collector. The birds, from the protection afforded them, were remarkably tame, and we could stand beneath the trees and watch them without their evincing the slightest fear. This was in April. Some might be seen *sitting* on their nests, with their long legs bent under them, the weight of their bodies resting for the most part on the tarsal joint; others standing on single leg close by, with shortened neck, the beak and head occasionally moving partially round as on a pivot; others flapped to and fro, ruffling up their head-gear, and occasionally sparring together. In their various movements, the dark-green-black of the head and back, with the thin snow-white occipital streamers flowing and quivering over the latter, gave a quaint, though not ungainly, look to the birds. From some of the nests we heard a subdued chattering like the cry of young, and it was to feed these hungry mouths that the parents were constantly leaving the trees to seek for food at all times of the day, while others were returning with supplies. As the sun set, however, they became more active. While I sat watching them from a neighbouring roof-top in the evening, numbers of them emerged from the leafy darkness, and one by one settled on the stark bare outstanding arms of the cotton-tree. After resting for a little time like gaunt spectres on the tree top, off they went, one after the other, with a "*kwa*"—seldom more than two in the same direction. As darkness set in, many returned, and the noise and hubbub from the trees rose to a fearful pitch. Until night hid them from my view, I could see the old birds going and coming, and hear the clamour of the young. What kind of nocturnal slumbers the priests enjoyed in the temple below, I never took the trouble to inquire, though I have little doubt that from constant use the noise of these *croakers* has become quite essential to their good night's rest.

Though these birds moved about very much during the day, yet it strikes me that twilight is the most active time with them, and that in most instances the departures during the day were to seek food for the newly-hatched young, which would require feeding oftener at first, and perhaps with more choice food.

I sent my man up one of the trees, whence he brought down three nests, two of which contained eggs, and the third, two young birds and one egg. Judging from their size, one of these little birds must have been born at least *three* days before the other; and on opening the egg I found a live chick inside, which would have required at least two days before it could have ventured out. The varying stages of the embryos in the other six eggs confirmed this idea. I should say the differences between them could not have been more than *six* days, and certainly not less than *three*; so that the Night-Heron must commence sitting on the first egg laid, and while engaged in its incubation, keep on laying, at fixed intervals, the other two, which form the complement.

In the smaller chick procured the eye was just opened, and of no determined colour. The bill and lore were of a yellowish flesh-colour, very pale, and tinged with blue. The legs of a similar colour, with pale claws. The head and back were covered with a long blackish down, and the rest of the body with more or less whitish down, somewhat resembling sheep's wool. The black down on the head was drawn out into long white tufts, which stood out from the head like a crown of thick threads.

In the larger chick, the eye was of a pale sea-green; the lore and bill were tinged with yellowish green. The long down of the head had opened out into filamentous ends. The legs were bluish sea-green above, and sienna-yellow beneath. The bare skin of the round projecting belly was sea-green, as also the dorsal skin. The colour of the down was light purplish grey, tipped with white on the crown, and giving place to white on the flanks and belly. The cry it uttered was a weak imitation of the old bird's croak.

The immature plumage of the yearling appears to undergo little change until the second winter, or until the bird is over two years old. One of the nests taken was covered by a bird in this first plumage, and the eggs were found to be narrower and of a darker blue than those of the mature bird. An individual in immature plumage was brought to me by a native, and the development of the testicles was proof positive that the bird in this plumage bred. It would be curious to inquire whether those in the mature plumage pair with those in the immature. I have certainly seen them together, but never ascertained whether two such owned the same nest.

Immature bird, ♂.—Iris reddish yellow or burnt sienna. Lore pale yellowish green, bluish towards the bill. Upper mandible and apical third of lower black; gonys, basal two-thirds of lower, and a line just above the edge of the upper mandible for two-thirds towards the base light yellowish green. Legs yellowish green, with pale brown claws.

Mature bird, ♀.—Lore bluish grey, with a slight tinge of yellow; bill black. Legs bright sienna-yellow, with a mixture of ochre; claws brownish black. Iris dark crimson.

A number of *Ascarides* were found in and about the intestines of this individual. They were of a yellowish flesh-colour, pointed at both ends, the longest measuring 3½ inches.

Besides the colony of Night-Herons at Honam, there is another at the Old Man's Home, where a large pond is enclosed by a hedge of tall bushes and shrubs, and beyond this is a high wall all round. Among these bushes the Night-Herons muster in countless numbers, placing their nests on every suitable branch, though often only a few feet from the ground. They are held sacred by the priests in the adjoining temple, and no one is allowed to kill or disturb them.

116. Scolopax rusticola, Linn.

Abundant during winter.

117. Gallinago uniclava, Hodgs.

Perhaps commoner than the succeeding species in winter, but in summer nearly all retire. Among a number of Snipes shot in May, only *one* of this species occurred.

118. Gallinago stenura (Temm.). Cantonese, "*Sha-chuy.*"

Great numbers stay and breed in the neighbourhood of Canton.

119. Gallinula chloropus (Linn.).

Abounds in some places.

120. Gallicrex cristata (Lath.). Cantonese, "*Can-tum.*"

A male specimen procured at Canton, which I forward for Mr. Sclater's examination*. Some years ago I procured one at Foochow.

Length $14\frac{1}{2}$ in., wing $8\frac{3}{8}$, tail $3\frac{1}{2}$. Bill $2\frac{1}{10}$ in., to angle $1\frac{1}{2}$; bare tibia $1\frac{1}{8}$, tarsus 3; mid-toe $3\frac{1}{8}$, its claw $\frac{6}{8}$. Bill greenish yellow, gradually yielding to vermilion as it approaches the basal *crest,* which mounts high on the forehead, and is bounded by a flesh-coloured line. Legs lead-colour, with a yellowish tinge, especially on the tarsus; claws brown. Tail consisting of ten feathers.

Gizzard oval, shaped like two shallow cups placed mouth to mouth, very muscular, $1\frac{5}{8}$ in. long, lined inside with a thick, broadly furrowed, moveable cuticle, and containing small shells, mussels, *Helices,* &c., many of which were in a pulverized state. Intestines 27 in. long: cæca situate $2\frac{7}{8}$ in. from anus; right one

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* It is certainly *Gallicrex cristata.*—P. L. S.

$2\frac{1}{2}$ in. long, and bulging at the end; left one $2\frac{2}{8}$ in., and of uniform size throughout.

121. Porzana phœnicura (Penn.).

In a cage for sale at the city-gate. I was informed that it was caught in the neighbourhood of Canton.

122. Porzana erythrothorax (Temm.): Faun. Japon. pl. 78. p. 121. Cantonese, "*Loug kai.*"

The pretty female of this species that I forward home was procured at Canton.

Length 8 in., wing $4\frac{1}{8}$, expanse 1. Tail consisting of ten soft feathers nearly 2 in. long. Bill: along culmen $\frac{7}{8}$, along edge of under mandible 1 in.; of a leaden blue colour, blackish on the roof; the angle of the mouth reddish. Eye-rim vermilion; iris bright indian red. Tibia naked for $\frac{7}{8}$ in., tarsus $1\frac{3}{8}$ in.; mid-toe $1\frac{1}{2}$ in., its claw $\frac{2\frac{1}{2}}{8}$. Legs bright madder-pink; soles pale dingy yellow, with sharp claws.

Tibial tendons rigid. Gizzard roundish, about $\frac{7}{8}$ in. in diameter, flattened, and somewhat muscular, lined with a moveable greenish cuticle set with broad rugæ. Cæca situate $1\frac{1}{8}$ in. from anus; left $\frac{3\frac{1}{2}}{8}$ long, right $\frac{1}{2}$, both of uniform size throughout.

It would be needless to add here a list of the marine *Scolopacidæ, Anseridæ*, &c., because it is pretty certain that all these migratory sea-birds that are found at Amoy are also found at Hongkong, and therefore reference can easily be made to my Amoy list, if the reader should wish for a notice of them. I may, however, add to the list of Ducks the Shoveller,

Rhynchaspis clypeata (Linn.),

which was brought in great abundance to the Hongkong market amongst other Ducks.

IV.—*Note on the Anatomy of* Cephalopterus penduliger.

By T. C. Eyton, F.Z.S.

I received only the body of this bird, taken out of one of the specimens sent home by Mr. Fraser, and described, in the 'Proceedings' of the Zoological Society, by Mr. Sclater (1860, p. 67). The greater portion of the intestines was gone.

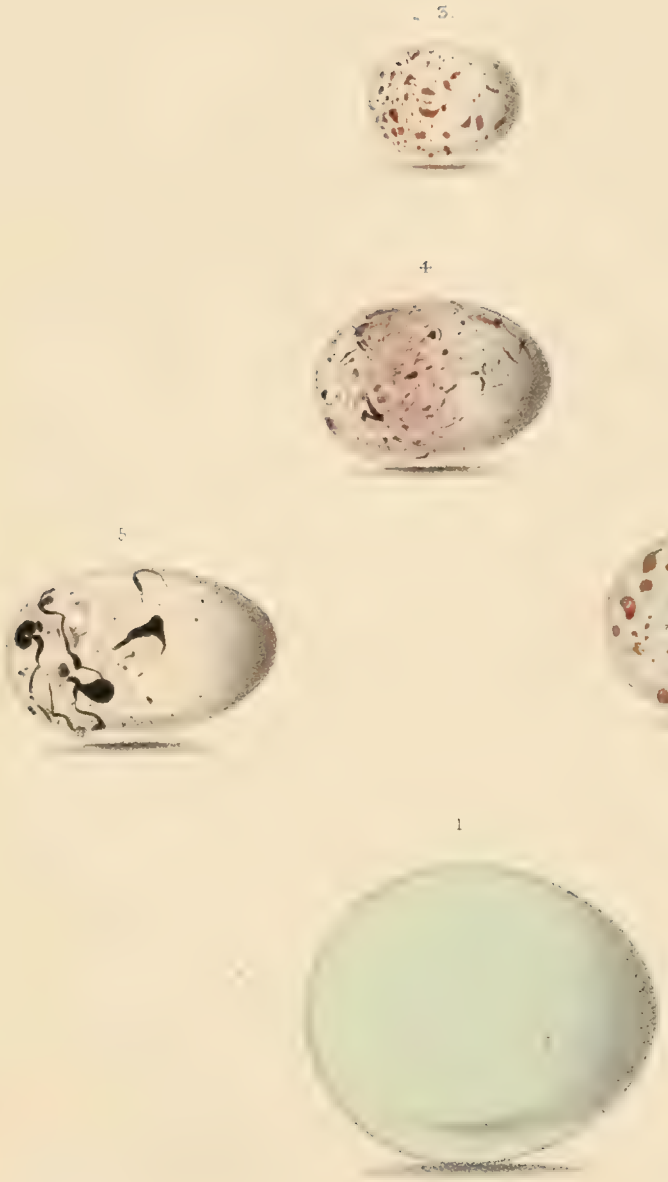
The tongue was pointed, horny at the tip, arrow-shaped; the epiglottis fringed with bristles, their points directed backwards; the trachea 0·4 (inch) in diameter in its upper portion for one inch, thence gradually dilated into an oblong bulb, which becomes 0·7 (inch) in diameter at its widest part near the centre. Immediately below the bulb the trachea is contracted to a width of 0·3 (inch), but again gradually increases in size to the bronchia, which are very large and increase in size to the sixth ring, afterwards rapidly decreasing. The sixth ring is very broad in comparison with the other bronchial rings attached to it. There are two large oval glands, one on the outer side and one on the inner side, between the branches of the bronchia. The trachea is furnished with the usual sterno-tracheal muscles, a few fibres decending from them to the sixth ring. The œsophagus is large in diameter, and swells out into a capacious crop, which was much damaged in the present specimen. It is contracted below the crop, but again becomes enlarged to the proventriculus, which is slightly thickened, smooth internally, and lined at its lower extremity by the epithelium.

The stomach, which was filled with hard seeds about the size of a small hazel-nut, is slightly muscular, 2 inches long by 1½ inch in diameter; the epithelium is slightly hardened, and corrugated longitudinally. The liver is bilobed.

V.—*On the Nesting of some Guatemalan Birds.* By ROBERT OWEN, C.M.Z.S. *With Remarks by* OSBERT SALVIN, M.A., F.Z.S.

(Plate II.)

WHEN I left Guatemala in April last, Mr Owen kindly undertook to procure for me what eggs he could of the birds found about San Gerónimo. By the mail of September I received a box containing the result of his labours, together with the notes relating to their capture. The collection altogether comprises 102 specimens, the number of species being 23. Of these I had previously obtained six. Five of these have been already figured in this Journal, vol. i. pl. 5; and the sixth is the egg of *Sialia wilsoni*, the well-known Blue Bird of North America. Amongst



EGGS OF GUATEMALAN BIRDS

W. C. Hewitson del et lith 1860

Printed by Hullmandel & Walton

the remaining 17 we have a most valuable addition to our knowledge of neotropical birds in the egg of the Quezal (*Pharomacrus paradiseus*), as well as in those of *Eumomota superciliaris, Pachyrhamphus aglaiæ, Geococcyx affinis, Urubitinga anthracina,* and *Asturina nitida,* which, together with *Mimus gracilis, Polioptila albiloris, Icterus gularis, I. mentalis, Centurus santacruzi,* and *Œdicnemus vocifer,* I believe to be now described for the first time. The value of these eggs is very much enhanced by the exceedingly careful way in which they have been collected. In every case but one, that of *Eumomota superciliaris,* where no mistake could have been made, one of the parent birds was procured. Each egg was written on in ink, and the bird ticketed with a corresponding number. The nests, too, which I shall describe below, have in many cases been sent. To the name of each species I have added a short description and the measurements of the egg. The rest of the paper is from Mr. Owen's pen.—O.S.

As any one who has travelled in this country will know, the drawbacks a collector has to contend with are not a few. Let these be my excuse for the smallness of my collection, which, I can assure my readers, is the result of some pretty hard work, and much exposure to a scorching sun. What disappointments the would-be naturalist has to suffer! Nests found, but the wary birds not at home when called upon. Long and fruitless vigils to be kept, gun in hand, behind some bush,—safe, as one flatters oneself, from observation, and all the while a helpless victim to swarms of delighted mosquitoes, which vie with each other in their endeavours to improve the opportunity of tasting a little European blood. Then it would appear that the powers of the unseen work to one's confusion. The other day I lost a very fine specimen of the 'Kolol')*Tinamus robustus*?) from a "bruja" having cast upon it the evil eye. Such at least was its end according to the belief of a "carbonero" who was bringing it to me from the mountain. He was coming along cheerfully enough with the bird under his arm, when he met a female of the "bruja" family; there was no time to cover it up before the mischief was done, and the victim struggling to death, all the while uttering most unusual cries.

The first showers of the rainy season appear to be the signal for nesting to begin; but a few species seem to anticipate this, and commence operations with the rains which fall in April.

1. TURDUS GRAYII. "*Cien-sonte.*" San Gerónimo. Bird and several eggs.

The nest of this Thrush is described in 'The Ibis,' vol. i. p. 6, and the egg figured on pl. 5.

The nest of the "Cien-sonte" is usually to be found in the hedge-rows and stunted bushes. The bird though common, is very shy.

2. MIMUS GRACILIS. "*Cien-sonte mejicano.*" San Gerónimo, May 30, 1860. Bird and several eggs.

General colour of the egg (Plate II. fig. 2) pale greenish grey, blotched with spots of red-brown and two shades of faint lilac. Axis 1·05 in., diam. ·7.

I see in my note-book that at this date (May 30) the breeding-time of this species is very advanced, it being among the earliest to begin building. Most of the nests I have taken were in the Nopales or cochineal-plantations, the nests being placed in the cactus. They are also to be found in the hedge-rows and bushes of the plain, usually in somewhat exposed places, about 5 or 6 feet from the ground. I have unfortunately neglected to send the nest, which is peculiar in having its rim or edge crowned with a circle of long thorns. The complement of eggs is three, and frequently two or three eggs of the "Tordito" (*Molothrus æneus*). In one instance I found in the same nest two eggs of the Mock-bird and five of the "Tordito."

The "Cien-sonte mejicano" is a shy bird, and does not easily fall a victim to the bird-catcher, by whom it is much persecuted for its unrivalled powers of song. I have known as much as six and even ten dollars refused for a good songster.

3. SIALIA WILSONI. "*Azulejo.*" Bird and four eggs.

The eggs of this bird are too well known to need description.

Four eggs, without nest, which was destroyed, from the high coarse grass which grows in the uncultivated parts of the cane-field.

4. Polioptila albiloris. Choacus, May 15, 1860. Female bird, nest, and four eggs.

The nest is composed outwardly of dried stalks of grass and roots, with a coating of cobweb and other adhesive materials. The interior lining consists of the feathery parts of seeds, horsehair, and fine grass, the whole forming a very neat, compact structure, measuring 1⅜ inch across the inside, and 1½ inch in depth.

The eggs (Plate II. fig. 3) are white, spotted with red, principally of two shades, the spots increasing in number towards the obtuse end. They measure, axis ·6, diam. ·45 in.

The nest was procured from Choacus, near the Rio Montagua, the same locality whence the male specimen was obtained from which the description in P.Z.S. 1860, p. 298, was taken.

Female bird, nest, and four eggs advanced in incubation. The nest was taken in the "*monte bajo*" (low brushwood) growing almost under the eaves of one of the ranchos.

5. Cotyle serripennis. "*Golondrina.*" San Gerónimo, May 20, 1860. Bird, nest, and five eggs.

The nest is composed of grass and fine roots, the inside being strewn with pieces of dead flag.

The eggs are white, and measure, axis ·7, diam. ·5 in.

The nest was dug out of the white sandy soil of a barranco in the Convent garden. The cave ran horizontally, and was about 2 feet in length, terminating in a chamber of just sufficient dimensions to allow the bird to turn round.

6. Progne dominicensis. Female bird and four eggs.

The eggs are white, and measure, axis, ·85, diam. ·63 in.

Mr. Owen has sent no note with these eggs.

7. Molothrus æneus. "*Tordito.*" San Gerónimo, June 2, 1860. Several eggs.

The eggs are pale greenish white, and measure, axis 1 inch, diam. ·75.

A few eggs of the "Tordito," taken from the nests of the "Chorcha" (*Icterus*) and the "Cien-sonte mejicano" (*Mimus gracilis*). The Indians here all identify these eggs as those of the "Tordito." However, personally, I have never surprised the bird on the nest of any other species. At the same time I may add that I have never seen it either building or occupied in any other domestic occupation whatever, which somewhat confirms the statement aforesaid. The eggs are found most commonly in the nests of the "Chorcha" and the "Cien-sonte mejicano," and occasionally in that of the largest species of "Chatillo" (*Pitangus derbianus*).

8. Icterus gularis. "*Chorcha.*" San Gerónimo, June 8, 1860. Hen bird and one egg.

The egg is a pale grey, blotched and streaked with very dark brown. It measures, axis 1 in., diam. ·7.

Mr. Owen describes the method of taking the nests of these *Icteri* in the note attached to the next species.

9. Icterus mentalis. "*Chorcha.*" San Gerónimo, May 5, 1860. Several birds' nests and eggs.

The materials used by this bird for its nest—and doubtless the same applies to the foregoing species—vary considerably; the structure, however, is the same in all. It is a compact and firmly woven nest, attached at the top to the ends of a bough, its length varying from 1 to 2 feet. In some, the materials used are fine dried creepers and twigs, with here and there a leaf; in others, fibrous roots and the stringy centres of the Maguey leaves; while others are formed exclusively of a species of *Tillandsia.* All are spherical at the bottom, and have a long loophole at the top for the entrance.

The eggs (Plate II. fig. 5) are like the last—a pale grey, spotted and streaked with very dark brown; on some there are marks of faint lilac. They measure, axis, 1·05 in., diam. ·7.

The "Chorcha" generally nests in colonies of four or five; I have never found more together: but it not unfrequently selects a completely isolated spot for its graceful, pendent nest. The breeding-place is mostly chosen on the banks of rivers or upon some tributary stream, over which the nest swings securely in the breeze. At first I experienced some difficulty in taking these nests, as they hang from the extreme points of the boughs, and, being rarely less than 18 feet from the ground, are inaccessible to the climber. The only way to obtain them is to provide oneself with a long light cord with a running noose at the end, and a few wild canes lashed together, so as to make two rods of the required length. At the extremity of one a bush-knife must be tied firmly, so that when the rod is held up with the knife uppermost, it points to the ground, the edge facing the cane at a small angle. By means of the other rod the noose is slipped over the nest a little below the aperture through which the bird passes, and the other end left hanging down. When the bird returns to the nest the string is drawn tight, and nothing remains but to cut the twig by which the nest hangs, with the knife, first twisting the other rod into the top of the nest, so as to lower it gradually when free. The number of eggs laid by one bird is two. There are, however, often eggs of the "Tordito" in the nest.

10. CYANOCITTA MELANOCYANEA. "*Charra.*" San Gerónimo, April 29, 1860. Bird and several eggs.

The nest and egg of this species are described in 'The Ibis,' vol. i. p. 21, and the egg figured on pl. 5.

The nest is invariably found in low thick bushes, about 6 feet from the ground.

11. PITANGUS DERBIANUS. "*Pecho amarilla.*" San Gerónimo, April 10, 1860. Bird, two nests, and several eggs.

The nest and eggs of this bird are described in 'The Ibis,' vol. i. p. 120, and the egg figured on pl. 5.

Among the eggs sent, there is considerable variation in size and colouring. Three correspond with the figure; the rest are much more distinctly spotted, with smaller and darker spots.

One of the nests I send has two openings; one, however, seems to be the rule: they are usually built at the ends of boughs, at various elevations from the ground, but always exceeding 8 feet. A favourite haunt is the Banana groves, where their nests may be found firmly wedged in among the golden clusters of the Banana fruit.

12. TYRANNUS MELANCHOLICUS. "*Pecho amarilla.*" San Gerónimo, May 10, 1860. Hen bird, two nests, and several eggs.

The nest and egg of this species are also described in 'The Ibis,' vol. i. p. 121, and the egg figured on pl. 5.

The nest of this bird is built upon the tops of low bushes or hedges, 7 or 8 feet from the ground, the site chosen being free from overhanging branches.

13. *Myiozetetes texensis.* San Gerónimo, May 5, 1860. Male and female bird, nest, and several eggs.

The nest and eggs of this species also are described in 'The Ibis,' vol. i. p. 123, and the egg figured on pl. 5.

14. PACHYRHAMPHUS AGLAIÆ. Choacus, May 15, 1860. Female bird, nest, and two eggs.

The nest is composed of tendrils, strips of bark, and grass, the interior and exterior being of the same materials, which are woven so as to form a hanging nest open at the top, 2 inches deep inside, and 2⅜ inches in diameter.

The egg (Plate II. fig. 4) is white, beautifully marked with pencillings of a pinkish red and occasional spots of the same colour. These markings are much blended and concentrated at the larger end. It measures, axis ·95, diam. ·6 in.

These eggs were in an advanced stage of incubation. The nest was built between, and hanging from, the forked branch of a sapling at the foot of the mountain. The bird was very tame.

15. ANTROSTOMUS ——?*. Night Hawk. Mountain of Santa Barbara, April 20, 1860. Hen bird with two eggs.

The eggs are white, and measure, axis 1·05 in., diam. ·8. I do not quite understand these eggs being white, except by supposing them to be accidentally so. In other respects, *i. e.* in form and texture, they agree with the eggs of other species of *Caprimulgidæ*.

These eggs, two in number, were found on the ground, at the foot of a large pine-tree. There was no nest.

16. EUMOMOTA SUPERCILIARIS. "*Torovoz.*" San Gerónimo, May 21, 1860. Several eggs.

The nest is described below.

The egg is glossy white, and measures, axis 1 in., diam. ·8. The form of the egg is quite that of a *Merops.*

This appears to be the height of the breeding-season with the "Torovoces." They are in full song, if their croaking note may be so termed, and are as noisy and busy now as they are mute and torpid during the rest of the year. I do not know of any sound that will convey a better idea of the note than that produced by the laboured respiration occurring after each time the air is exhausted in the lungs by the spasms of the hooping-cough.

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* The species is nearly allied to (perhaps identical with) *A. vociferus.*—P. L. S.

The nest of the 'Torovoz' is subterranean, and is usually found in the banks of rivers, or of water-courses which empty into them. The excavation is horizontal, and at a distance from the surface, varying with the depth of the barranco or bank in which it is situated. The size of the orifice is sufficient to allow the bare arm to be introduced, the shape being round and regular for 3, or at most 9 feet, where the shaft terminates in a circular chamber about 8 inches in diameter and 5 inches high. In this chamber the eggs, usually four in number, are deposited upon the bare soil. The banks of the river which winds through the plain of San Gerónimo are full of excavations made by this bird,—that is to say, in such places where the soil is light and the bank chops down perpendicularly. It is a simple matter to hit upon those which are inhabited, as the entrance to the abandoned ones will be found perfectly smooth, whereas the mouth of those which contain eggs or young is ploughed up in two parallel furrows made by the old bird when passing in and out. The 'Torovoz' is exceedingly tame, and, when startled from its nest, will, perched upon a bough a few yards distant, watch the demolition of its habitation with a degree of attention and fancied security more easily imagined than described.

I am now never able to induce my "darky" Chus to plunge his arms into the holes to seek the eggs; so I have either to do it myself, or to dig right up to the far end. At first he was '*muy valiente*;' but it chanced one day, whilst hanging on to a root halfway down the bank of a river, with one arm buried in a '*cueva*,' that the tips of his fingers suddenly came in contact with the damp abdomen of a callow 'Torovoz.' "Carramba, Don Roberto!" screamed the poor fellow, looking as white as he could through his African skin, "me pico la culebra!" Thereupon he fell-to in good earnest, invoking the saints to save him, running over a long list of them, many of whose names I had never heard before. Not until after much digging (we had already cut a good piece of the bank down to enable him to reach the nest), and a fair sight of the supposed reptile, would he be comforted, and then, with fervent maledictions on the genus in general, and this species in particular, he shouldered his gun and walked on in silence.

17. Pharomacrus paradiseus. "*Quezal.*" Mountains of Santa Cruz, June 11, 1860. Female bird and two eggs.

The egg (Plate II. fig. 1) is a bluish green, without spots or markings, its form being like that of the egg of any other Fissirostral species. It measures, axis 1·4 in., diam. 1·15 in.

These eggs and the bird were exhibited at a Meeting of the Zoological Society, November 13, 1860.

In an expedition to the mountain of Santa Cruz, one of our hunters told me that he knew of a Quezal's nest about a league from Chilasco, a place in the same range, and offered to shoot for me the female and bring me the eggs if I would send my servant to help him. This I accordingly did, and my man returned with the hen and two eggs. They stated that they found the nest in a hollow of a decayed forest-tree, about 26 feet from the ground. There was but one orifice, not more than sufficiently large to allow the bird to enter, and the whole interior cavity was barely large enough to admit of the bird turning round. Inside there were no signs of a nest, beyond a layer of small particles of decayed wood upon which the eggs were deposited. The mountaineers all say that the bird avails itself of the deserted hole of a Woodpecker for its nesting-place, probably founding the supposition on the evident inaptness of the bird's beak for boring into trees.—R. O.

I think that this satisfactory account at once sets at rest the disputed points regarding the breeding of the Quezal. My own belief is, and always has been, that the male bird never incubates the eggs, but leaves that duty entirely to the female. The origin of the story of the nest being placed in a hole passing through the tree has evidently arisen from the inability of supposing any other form of nest in the hollow of a tree which could dispose of the tail of the male bird. Imagination came to the rescue, and suggested the one hole for the bird to enter, and the other for it to pass out. That the story took its origin in Guatemala I have no doubt; I have frequently had described to me such a nest, but never by one who had seen it.—O. S.

18. GEOCOCCYX AFFINIS. "*Siguamonte,*" or "*Guarda camino.*" San Gerónimo, April 3, 1860. Bird and four eggs.

The egg is pure white with a smooth surface; it measures, axis 1·45 in., diam. 1·05 in.

This is a very common bird at San Gerónimo. It builds its nest in the forks of trees, generally about 12 feet from the ground. The nest is a loose unfinished-looking structure, consisting of a few dried twigs lined with stalks of grass.

19. CENTURUS SANTACRUZII. "*Carpentero.*" San Gerónimo, June 2, 1860. Bird and four eggs.

The eggs are pure white, but somewhat stained with spots of foreign matter; they measure, axis 1 in., diam. ·75.

These eggs were taken in one of the high trees which are scattered all over the plain of San Gerónimo. They were quite fresh.

20. POLYBORUS THARUS. "*Quebranta-hueso.*" San Gerónimo, April 2, 1860. Two birds and four eggs.

The egg, which is well known in North American collections, has a light-red ground colour, but is spotted and blotched all over with several shades of a darker red. It measures, axis 2·15 in., diam. 1·6 in.

One nest which I took was built on the very crown of a high tree in the plain of San Gerónimo. It was made of small branches twisted together, and had a slight lining of coarse grass. It was shallow, and formed a mass of considerable size. I had some trouble in getting the eggs: the position of the nest and the thick branchless trunk of the tree were difficulties which the Indian whose services I had engaged pronounced insurmountable. All my proposed expedients for facilitating his ascent were knocked on the head by that everlasting "Quien sabe, Patron?" and it was only on the following conditions that my dusky friend allowed himself to be tied to one end of a lasso, the other end being thrown over the lowest branch and hauled through the air until he got into fair climbing. I was to pay him well if he went up and came down again safely; but if on the other hand he made his descent head foremost and died from the effects of the fall, I was to marry his widow and be a kind father to his children. Thus promising, in the blindest compliance, all obstacles were at once removed.

21. URUBITINGA ANTHRACINA. "*Gavilan.*" San Gerónimo, April 29, 1860. Bird and one egg.

The egg is white, with an inner surface of sea-green, as in all eggs of the *Buteonidæ*. The outer surface is beautifully marked with blotches of lilac and spots of three shades of red. It measures, axis 2·15 in., diam. 1·7 in.

Taken, at San Gerónimo, from a high tree at the foot of the mountain-range which bounds the plain.

22. ASTURINA NITIDA. "*Gavilan.*" San Gerónimo, April 3, 1860. Three birds and three eggs.

These eggs are all white, without natural colouring. The inner coating of the shell is sea-green. They strengthen the close connexion which exists between *Asturina* and *Astur*.

The nest of this Hawk is usually found in the high trees which are scattered over the plain, and not unfrequently within a few yards of the Indian ranchos. Two eggs seem to be the complement laid by one bird.

23. ŒDICNEMUS BISTRIATUS*. "*Alcaraban.*" Plain of San Gerónimo, May 5, 1860. Bird and one egg.

The egg is precisely like that of *Œ. crepitans*, being of a pale ochreous brown spotted all over with several shades of dark brown. It measures, axis 2·3 in., diam. 1·45 in.

I have only been able to obtain one egg of this bird. Their nesting-time must have been long past, judging from the size of the young birds which may be seen in the plain. The egg was stale, but the old birds still frequented the spot where it was found. The egg was deposited on the bare ground, the place chosen being slightly hollowed out, and at the foot of a straggling shrub which afforded a slight shade.

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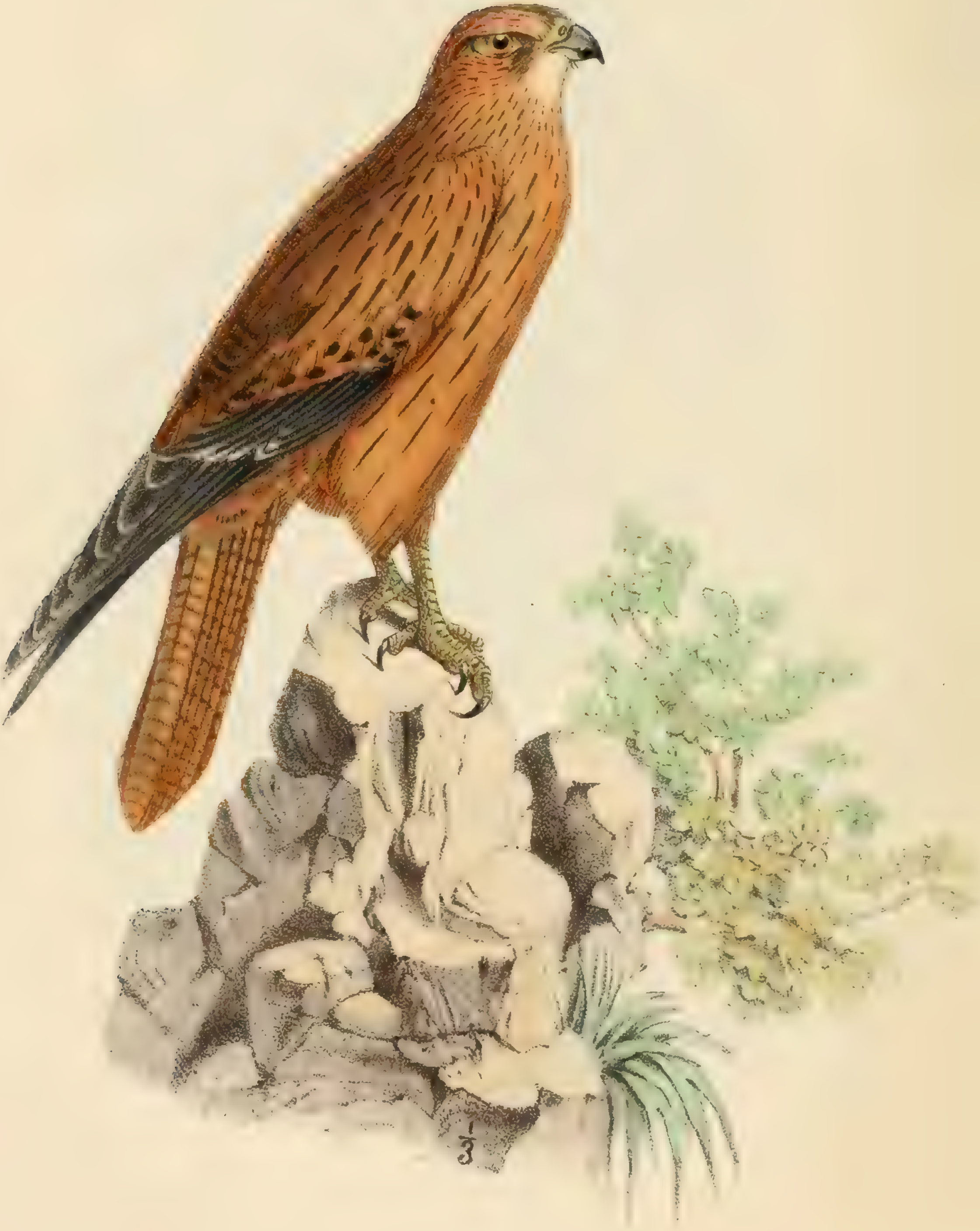
* This *Œdicnemus* proves to be *Œ. bistriatus* (Wagl.): *Œ. vocifer*, L'Herm. Mag. de Zool. 1837, pl. 84.—ED.



J. Jennens, lith.

M & N. Hanhart, Imp$^{t.}$

TINNUNCULUS ALOPEX.

EXPLANATION OF PLATE II.

Fig. 1. Egg of *Pharomacrus paradiseus* (p. 66).
Fig. 2. Egg of *Mimus gracilis* (p. 60).
Fig. 3. Egg of *Polioptila albiloris* (p. 61).
Fig. 4. Egg of *Pachyrhamphus aglaiæ* (p. 64).
Fig. 5. Egg of *Icterus mentalis* (p. 62).

VI.—*On new or little-known Birds of North-Eastern Africa.* By Hofrath Theodor von Heuglin. (Part II.)

[Continued from vol. ii. p. 414.]

(Plate IV.)

III. Tinnunculus alopex, Heuglin. (Plate IV.) (*Falco alopex,* Heugl. Uebers. der Vögel N.O. Afr. no. 51.)

T. ferrugineus, subalaribus paulo pallidioribus, totus nigro striatus: caudæ fasciis xviii–xx æqualibus, transversis, nigricantibus: remigibus fusco-nigris rufescente variegatis et basin versus interne albis: long. tota (fœm. adultæ) 1·1, alæ 10·6, caudæ 7·0, tarsi 1·9 poll. et lin. Gall.

Hab. In prov. Galabat et locis vicinis.

The general colour of this bird is fox-red, with well-defined blackish spots along the shafts of the feathers. The tail is somewhat darker superiorly, with from eighteen to twenty narrow inconspicuous cross-bands on the shafts of the rectrices. The last of these cross-bands is not conspicuously broader and better defined than the next to it, and there is no lighter edge at the extremity of the tail. The lower coverts of the wings are scarcely lighter than the body, and each feather has a dark spot on the shaft; the inner barbs of the primaries and secondaries are whitish at the roots. The soft parts are greenish yellow; the bill and claws are bluish, the base of the lower bill yellowish, the iris brown.

I discovered this bird, which is easily distinguished from all the other species of *Tinnunculus,* during my sporting excursions into the countries on the Upper Nile. With regard to its proportions, it is intermediate between *F. tinnunculus* and *F. rupicoloides,* but is more slender and has the wings longer than either of them.

The bill is longer and not so strong: the toes and tarsi are somewhat longer; the latter are shielded upwards to half their height. The species is to be recognized at a distance by its red colour, by the ferruginous lower coverts of the wings, and by the absence of grey on the head and of any broad band on the tail. As far as I know, it is confined to very narrow limits, as I have only found it on the western frontier of the provinces of Wóchni, Galabat, and Goara, and in the prairies of Eastern Sennaar, near Atbara, where it inhabits steep, isolated, volcanic, rocky mountains, sometimes in company with *F. tinnunculus*. It appears to nest in clefts of the rocks in preference to high trees, and hunts for its prey, which consists chiefly of grasshoppers, *Mantides*, and *Truchsalides*, in the morning and evening. Like *F. erythropus* and *F. æsalon*, it devours its prey (holding it in its claws) as it flies, after having previously picked off the legs. I have never found birds or mammals in its stomach, but sometimes large beetles (*Copris* and *Ateuchus*). Whenever the prairie takes fire at the time of the drought, this Kestrel hurries to the spot, often from a distance of several miles, and there joins the great flocks of other insectivorous birds which assemble to hunt after orthopterous and lepidopterous insects, snakes, and other animals that are attempting to escape from the flames. It is difficult to describe the impression made by so strange a spectacle. A sea of flame, fluctuating and roaring like thunder, spreads rapidly as lightning through the dry and high grass, and is overshadowed by a black smoke, which eclipses the daylight and reflects the shooting flashes of fire. Amid this uproar of the elements, the Bee-eater (*Merops nubicus*, Gm.), the Parasitic Kite (*Milvus parasiticus*), the different species of *Circus* and *Tinnunculus* are franticly chasing and pursuing their prey, sometimes plunging into the midst of the smoke, and for the moment disappearing in it. It often happens that one of them singes its wings or tail. This infernal scene is followed by a flock of Storks (*Sphenorhynchus abdimii*), which, melancholy and grave, stride over the burnt and still glowing prairie, seizing the half-roasted grasshoppers with the never-missing thrust of their bills, or robbing of their prey the unfortunate Plovers (*Chettusiæ*) which happen to come into too close proximity.

I have never found *Tinnunculus alopex* in the interior of Abyssinia, in the prairies of Kordofan, or on the Blue and White Niles, but it probably occurs in the southern parts of the Peninsula of Sennaar (near Djebel Róra and Djebel Gul) and in Taka. It is not more shy than the species most closely allied to it, and its voice is also the same. I add a more detailed description.

The ground-colour is fox-red, with the exception of the throat, which is dirty yellowish olive: there is a blackish spot before the eye, produced downwards into a sort of beard, and deep-coloured stripes on the shafts of the feathers of the upper part of the body, of the breast, belly, and of the sides; these stripes are brownish on the lower coverts of the tail and on the longest of the upper coverts. Wing-feathers brownish-black, with transverse, sometimes continuous, ferruginous spots on the inner barbs, which become gradually lighter and nearly white at the bases. The secondaries and tertiaries have a dirty yellowish-olive margin at the extremities, and the transverse spots extend also to the outer web, being interrupted by the shaft. The scapularies have the spots on the shafts broader and rounded at one end, and some of them have indistinct, dark, transverse marks, probably the remnants of an earlier stage of plumage. The tail is dark ferruginous superiorly, with the shafts somewhat darker; it is lighter inferiorly, with from eighteen to twenty narrow cross-bands, interrupted by the shafts, and gradually becoming broader and more deeply coloured at the extremity. The broad terminal band, however, which is found in most of the other species, and the light coloration of the extremity, are entirely absent.

The lower coverts of the wings show the same coloration as the upper parts of the body, whilst they are light olive and black-spotted in *F. tinnunculus, rupicola,* &c., and uniform yellowish white in *F. rupicoloides.*

The male is distinguished by a rather more intense coloration, the female by its somewhat larger size. The wings extend nearly to the end of the tail.

I know nothing of the earlier plumage, the propagation, &c. of this Kestrel. I have found it from the month of December to May, always in the same localities.

Typical specimens have been sent to the collections of Berlin, Frankfort, Stuttgardt, Vienna, and to that of Pastor Brehm. The other species of *Tinnunculus* observed by me in North-Eastern Africa are the following:—

1. TINNUNCULUS CENCHRIS (Naum.).

Very common during the spring in Lower Egypt, especially round Alexandria, breeding in the walls of the citadel. I shot it in the month of May near Cairo, and met with single specimens on the Nile, through the whole of Egypt and Nubia. We shot one specimen in the month of April (1853) in Galabat, on the western frontier of Abyssinia. Rüppell appears to have found it also in Eastern and Central Abyssinia.

2. TINNUNCULUS ALAUDARIUS, Briss. (*T. rufescens*, Sw. ?)

This is a stationary bird in Egypt, Arabia, and Nubia, and single specimens occur in Abyssinia, Kordofan, Sennaar, &c. It breeds as early as the month of March, in numerous pairs, near the Pyramids, in the tombs of Sagára, &c.

3. TINNUNCULUS RUPICOLA, Daud.

I have not found it; but Rüppell says that it is frequent in the whole of North-Eastern Africa (Syst. Uebers. p. 11. no. 33).

4. TINNUNCULUS VESPERTINUS (Linn.).

Often seen in numerous flocks, in every sort of plumage, in autumn and spring in Lower Egypt, near ditches, fences, and bushes. Single specimens occur in Upper Egypt, Nubia, and Sennaar. It does not regularly make its appearance, and sometimes several years pass without a single specimen being met with.

IV. MELIERAX METABATES, sp. nov.

M. Melieraci polyzono affinis sed paulo minor, et differt pedibus et rostro robustioribus, illis flavis; colore tergæi obscuriore; plumis axillaribus dorso concoloribus, pogoniis externis rectricis primæ sexties aut septies fasciatis: rectricum lateralium apicibus albis multo angustioribus; regionibus mystacali, ophthalmica et parotica vertice concoloribus: long. tota (maris adulti) vix 15·0, rostri a fronte 1·25, ab angulo oris 1·3, alt. rostri 8·5, alæ 12·0, caudæ 7·5, digiti medii cum ungue 2·4, hall. cum ungue 1·7, tarsi 3·2 poll. et lin. Gall.: ceromate et iridibus pallide flavis.

Hab. In reg. Nili albi sup.

One of the natives killed a specimen of *Melierax* in the year 1853–1854, on the upper Bahr el Abiad, between 6° and 7° N. lat. His attention had been directed to the bird by its habits being very different from those of *M. polyzonus*. Although its general form was extremely similar to that of the species named, and to that of *M. musicus*, a more accurate comparison appeared to be necessary, and considerable differences were soon discovered. Not venturing, however, to found a new species on my sole authority, I have sent the unique specimen to Dr. Hartlaub of Bremen, who declares it certainly to be a good and new species, and I therefore hasten to make it known.

Comparing this bird with *M. polyzonus* and *M. musicus*, we observe that the head and ocular region are of the same colour, whilst the latter is black in the two other species; the transverse streaks on the belly and on the upper and lower coverts of the tail are broader and more intense; the upper and inner (not lower) surfaces of the fore-arm are not variegated with white; there are more numerous and more intensely coloured transverse bands on the tail; the pure white extremities of the rectrices are less broad; there are four or five white, somewhat greyish-dotted cross-bands on the third rectrix, besides the white spot on the extremity. The hind-toe with nail is more than 2 lines longer than in *M. polyzonus*, male. The lateral upper coverts of the tail are not white as in *F. musicus*, but transversely striated as in *M. polyzonus*. The tarsus is 2 inches long, from the end of the feathers to the base of the toes.

I am not able to give any details concerning the habits and distribution of this species. Perhaps it is not rare on the Bahr el Abiad, but generally confounded with *M. polyzonus*.

Melierax polyzonus (a species very distinct from *M. musicus*) lives in North-Eastern Africa, from 17° or 16° N. lat. southwards, in the southern parts of Nubia, in Kordofan, Taka, Sennaar, Abyssinia, and in the Somàli country. It is by no means a rare bird (except in the higher mountainous parts), not shy, and easily tamed. I found an apparently new nest in February 1857, in the Bajada Desert, on a high, thickly-leaved *Mimosa*. It was necessary to make a great noise in order to induce the bird to leave the nest, and we had then no time to examine it. The natives assured me that the bird frequently breeds on palms round Chartum.

The other species of *Asturinæ* found in North-Eastern Africa are:—

1. ASTUR PALUMBARIUS, L.

"Single, in Egypt," Rüpp. Probably in winter only.

2. ASTUR MELANOLEUCUS, Smith. Fazogloa, Paul von Würtemb.

3. MICRONISUS MONOGRAMMICUS (Temm.).

Rare, in dense bushes in Western Abyssinia (Galabat), in Fazogloa, and along the Bahr el Abiad. This species is very shy, appears to migrate, and to breed in the month of May. The iris is very large and brown.

4. MICRONISUS GABAR (Daud.). Var. *nilotica*, Sundev.

The most northern point of its occurrence on the Nile is, according to my observations, in Middle Nubia, in the provinces of Dar-Mahas and Dar-Sukot. It is very frequent in Southern Nubia, somewhat rarer in Kordofan, Abyssinia, Sennaar, on the Bahr el Abiad and Bahr el Azrak. Lichtenstein, as long ago as in his 'Doubletten-Verzeichniss,' pointed out the differences between the eastern and western varieties:—"Specimina e Nubia et Africa australi *Nisum* magnitudine superant: mas 14″, fœm. 15½″ longa. Senegalensia autem multo minora: mas 10″, fœm. 11″ longa; sed vix specie diversa." Conf. Sundev. Oefvers. 1850, p. 132.

5. MICRONISUS NIGER (Vieill.).

Always met with singly in Western Abyssinia, Sennaar, and Kordofan. The most northern point at which I have found this species is Dabbeh, on the frontier between Dar-Dongola and Dar-Schaikieh. I doubt not that it is a good species, different from the preceding. Iris and feet pale yellow.

6. ACCIPITER SPHENURUS (Rüpp.).

Rare in Kolla (Western Abyssinia) and on the Blue Nile; probably in Southern Kordofan. The bird described* by Strickland as a variety of this species probably belongs to *A. minullus*. A young bird, similar to Strickland's specimen (which came from Kordofan), shot by myself near Chartum in a Mimosa-forest, has been accurately compared with an old Abyssinian specimen of *A. minullus,* without any specific difference having been discovered.

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* Proc. Zool. Soc. 1850, p. 215.

7. Accipiter minullus (Daud.).

Rare, in thick bushes on the Blue Nile, in Western Abyssinia, on the Mareb. East-African specimens appear to form a very constant variety.

8. Accipiter perspicillaris (Rüpp.) (probably identical with *A. exilis,* Temm.).

Rare in Abyssina and on the Blue Nile.

9. Accipiter unduliventris (Rüpp.).

Single specimens occur in the valleys of Simén, in Abyssinia (Rüpp.).

10. Accipiter nisus (Linn.).

Frequent in Egypt during the winter, occasionally in Arabia, and along the Nile southwards to Kordofan and Sennaar.

V. Buteo minor, sp. nov. (?).

B. Buteoni tachardo simillimus, sed differt rostro longiore et graciliore, pedibus longioribus: tibiarum partibus $\frac{3}{4}$ aut $\frac{4}{5}$ (in *B. tachardo* adulto $\frac{2}{3}$) nudis: remigum tertia (in *B. tachardo* quarta) longissima: dorso et tectricibus alarum chalybeo-nitentibus: long. tota (fœmin. adult.) 15½, rostri ab angulo oris 1·4, rostri a fronte 1·0, tarsi 2·8, caudæ 7·0, alæ 12.

Hab. In Africa Bor. Orient. regione pluviosa.

A species of *Buteo,* closely allied to *B. tachardus,* is found singly in the regions situated within the rainy zone of North-Eastern Africa. I have called it *Buteo minor.* The bill is longer and more slender than in *B. tachardus*; the tarsi are several lines longer, one-fourth or one-fifth of their length being covered with feathers; the third primary is the longest. The colours are subject to variations, as in *B. tachardus* and *B. vulgaris*; but the whole back and the covers of the wings in *B. minor* are distinguished by a very strong metallic violet-like splendour. It does not appear as if there were any other constant difference in the coloration of the three species named.

I cannot decide the question whether *B. tachardus* from Smyrna and from Southern Russia ought to be referred to the present species, nor do I know whether *B. minor* is a stationary bird in the Sudan.

The following are the other known species of the genus in North-Eastern Africa :—

1, 2. BUTEO ANCEPS and B. EXIMIUS, Brehm ('Naumannia,' 1854), are known to me only from the names. They are found on the Blue Nile.

3. BUTEO RUFIPENNIS, Sundev. and Strickl.* has been erroneously taken by myself for a species of *Circus*, and described and figured as *Falco mülleri*, nob. ('Naumannia,' iii. 1849). Sundevall has correctly classed it as a *Poliornis*, Kaup. It is frequently found in the months from June to November round Chartum, on the Bahr el Abiad, and in Kordofan; its habits approach to those of *Circus pallidus*, but it is also frequently found sitting on trees.

4. BUTEO RUFINUS, Rüpp., is, without doubt, identical with *Buteo ferox*, Gm., and *Butaëtus leucurus*, Naumann. I have found this beautiful bird from October to March, generally in pairs, along the Nile, in Upper Egypt and Nubia, and still more frequently in Eastern Sennaar, and in the forests of the North-Western Kolla. The iris is dark brown; bill bluish; base of the mandible lead-grey; angle of the mouth, cere and feet yellowish. Immature specimens have the ground-colour of the tail light brownish-grey, with ferruginous shades. The wings extend to a distance of 8 inches from the end of the tail. The total length of the male is about 20 inches; that of the female 22 or 23 inches.

5. BUTEO AUGUR, Rüpp.

This is a beautiful bird, representing *B. jacal* of Southern Africa. It is frequently found southwards from Mareb, in Eastern and Central Abyssinia.

6. BUTEO VULGARIS, Bechst.

Occasionally seen during the winter in Egypt. According to Rüppell, "Everywhere in N. E. Africa."

[To be continued.]

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* Proc. Zool. Soc. 1850, p. 214, pl. xxii.

VII.—*Notes on the Birds observed at Bodö during the spring and summer of* 1857. By Frederick and Percy Godman.

In 1857, being anxious to make an ornithological tour, we determined to visit Norway, and fixed upon Bodö as our head-quarters, in consequence of the success which had attended the Rev. H. B. Tristram in finding the Great Snipe breeding in that locality.

The village of Bodö (for, though the capital of the province of Nordland, and consequently the residence of the Amtmand, judge, and magistrates, it cannot be called a town) contains about 300 inhabitants, and is situated on the west coast of Norway, in latitude 67° North, longitude 14° East. The trade, which is unimportant, consists chiefly in the export of dried cod-fish to Spain, Portugal, and the ports of the Mediterranean. The fish are caught during the winter off the Loffoden Isles, about seventy or eighty miles distant, brought to Bodö, and dried during the summer on rocks in the neighbourhood.

Immediately behind the village extends a large marsh, triangular in shape, with the Salten Fjord on the south and east, the sea on the west, and a range of mountains on the north, which gradually increase in height as they recede from the plain. The marsh is for the most part covered with grass and bog-plants, with small shrubs of Sallow and Dwarf Birch, which latter are more abundant towards the edges under the mountains.

About five miles to the north-east of Bodö are situated two large lakes in the mountains, supplied by the melting of the snow from the neighbouring Fjelds.

We stayed at Bodö till the end of July, working all the surrounding country for eggs and birds, and making several short excursions to the interior. We then proceeded northwards to Alten, and crossing the mountains thence to Haparanda, at the head of the Gulf of Bothnia, paid the late Mr. Wolley a hurried visit at his quarters at Muonioniska. From Haparanda we went to Stockholm, St. Petersburg, Moscow, Nijnei-Novgorod, and were then obliged to return in haste to England.

Circumstances prevented our starting together—Percy arriving April 27th; Frederick, May 26th. Nothing was done in oology before the end of May, and to the few notes made previous to this time we have thought it better to affix the date and initials, showing by whom the observations were made. All observations subsequent to this date were made together.

1. White-tailed Eagle. *Falco albicilla.*

The first day after my arrival, as I was walking across the marsh, a White-tailed Eagle soared by, high over my head, and, passing the village, flew towards the sea. While talking that evening to a Norwegian sailor who could understand a few words of English, I was told that a pair generally nested on an island called Hgert ö (Heart Island), close to Bodö. I accordingly hired a boat for the following day, and starting directly after breakfast, soon reached the island. A fisherman and his family were living on it, and from them I learned that the birds bred there regularly, but that the young had already been hatched. Guided by the fisherman and his son, I walked along the shore to the cliff where the nest occupied at the time was situated. The cliff was a sheer precipice, about 90 to 100 feet high. The nest was on a ledge of the rock, about 20 feet from the top, and from the place where we stood looked merely like a few sticks left there accidentally. Further on we were able to climb the rock, when we reached a spot which overhung the nest in such a way, that, though impossible to see into it, we yet could hear the cry of the young birds. We stayed some time, but, having no ropes, were obliged to give up all hopes of being able to reach the nest. During the time we were there the old birds kept flying from rock to rock, and occasionally came quite near where we were lying, uttering all the time a harsh cry. As soon as we left the vicinity of the nest, I saw one of the old birds fly back and settle on it. The same day I saw three White-tailed Eagles on this island, two of which evidently belonged to the nest; the third appeared to be an immature bird, the tail-feathers being of a dark-brown colour. About a week after my visit, one of the young birds, with its leg cut off, and too much decayed to preserve, was brought to me by the fisherman. He had pushed it out of the nest with a stick and killed it, in order to get the premium (about half-a-crown) given by the Norwegian government for every eagle killed.—P. G.

This species was not uncommon along the neighbouring coast. During an excursion to an adjacent fjord we saw seven in one day, one of which was devouring a fish, and was so intently engaged, that it took no notice of our boat, though we passed close by the rock on which it was sitting.

2. The Osprey. *Falco haliaëtus.*

One example only of this bird came under our notice when we were rowing up Kop Elo from the Ofoden Fjord towards Kop Vaud, about twenty miles north of Bodö. It flew directly over our heads, and we had a capital view of it.

3. The Peregrine Falcon. *Falco peregrinus.*

This Falcon I saw for the first time on the 7th of May. On the 16th of the same month I was watching a pair of Ravens, which I knew had a nest in a cliff on the side of the valley opposite to which I was lying, when I heard them making a great noise at the other end. I soon saw the cause of it: a pair of Peregrine Falcons had approached too near the nest, and were being chased by the Ravens. The Falcons were ultimately driven away.—P. G.

No other example came under our notice.

4. The Merlin. *Falco æsalon.*

Whilst watching the raven's-nest mentioned in the last paragraph, a Merlin settled on a stone a short distance from me, and remained there some time arranging its feathers.—P. G.

We subsequently saw one other bird of this species near the same locality.

5. The Kestrel. *Falco tinnunculus.*

One specimen only of this bird came under our notice, which had a nest in an inaccessible cliff on the edge of the marsh.

6. The Rough-legged Buzzard (*Falco lagopus*) we saw but seldom near Bodö. During an excursion northward we found a nest, situated on the top of a Scotch-fir tree; it contained young. Our attention was attracted to it by the cries of the old birds, which kept flying round us as long as we were near the spot.

7. THE SHORT-EARED OWL. *Strix brachyotus.*

On May 13th, some distance up the Salten Fjord, I first saw one of these Owls, as it flew up from amongst some stunted birch-shrubs. There was a great deal of snow on the ground at the time.—P. G.

There was a pair in the marsh at the back of Bodö, which we felt convinced were breeding there; but though we spent many evenings in watching one of them hunting, and saw it take food to the other, we were unable to discover the nest.

8. THE HAWK OWL (*Strix funerea*) appeared to be not uncommon about Kop Vaud. In one day's walk through these forests we came across three different broods of young, some of which we shot. We saw a great quantity of Lemmings in this quarter, which may have been the reason of this Owl being so common that season. We also saw the Hawk Owl, though rarely, in the neighbourhood of Bodö. It appears not to be at all inconvenienced by the light, as all we saw were flying about in broad daylight.

9. THE PIED FLYCATCHER (*Muscicapa luctuosa*) we first saw May 27th, some way up the mountains to the north of Bodö. A few days after we found their nest close to the spot where we had before observed them. It was situated in a hole of a leaning rotten birch-tree, but was not quite finished. On visiting it again a short time after, we discovered the nest had been destroyed by a mouse. The species was not common.

10. THE DIPPER (*Cinclus aquaticus*) came under our notice in a few localities, being seen occasionally throughout the summer.

11. THE MISSEL THRUSH. *Turdus viscivorus.*

We found a nest and eggs of this bird at Kop Vaud, July 6th. The only one observed.

12. THE FIELDFARE. *Turdus pilaris.*

A plentiful bird about Bodö, breeding there in tolerable numbers. We discovered two large colonies, from which we took many eggs. The nests were usually placed from 10 to 15 feet from the ground. The first colony we discovered May 20th.

On the 27th we took two nests, but as the greater number of them did not contain their full complement of eggs, we left them. On returning three or four days after, we found that the magpies and crows had forestalled us. This colony was situated among some willow and birch trees, on a hill in the marsh. The other colony, which we discovered some days later, was up the mountains. Besides these two colonies, we took several nests situated by themselves, and far away from what were apparently their head-quarters. The latter we were careful to identify. Our attention was attracted to the second colony by the noise made by the old birds.

13. THE REDWING. *Turdus iliacus.*

This bird also breeds in the neighbourhood. The first nest we found May 28th; it was situated in a Juniper bush, almost on the ground. We saw the bird on this, as on every other nest of this species that we took. It was not unusual to find a pair breeding in the midst of a colony of Fieldfares; the difference, however, between the two nests made it easy to distinguish at first sight to which species it belonged, that of the Fieldfare being larger, and composed of coarser materials. The Redwing is not nearly so shy as the Fieldfare when near its nest, often requiring to be touched before it would quit it. It does not seem to build so far from the ground as the last-mentioned species.

14. THE BLACKBIRD. *Turdus merula.*

We saw but two examples of this bird during our stay at Bodö, both of them on June 30th, when we also found a nest.

15. THE RING OUZEL. *Turdus torquatus.*

Birds of this species were scattered over all the mountains in the neighbourhood, and were there when we first arrived. We found one nest, situated on the ground, and containing four eggs. This species was far more shy than either Fieldfare or Redwing.

16. THE HEDGE-SPARROW. *Accentor modularis.*

One pair only of these birds came under our notice. We found their nest on June 21st.

17. The Blue-throated Warbler. *Sylvia suecica.*

This bird seemed quite to take the place of our Robin in these latitudes : in almost every farm-yard, and near every house, a pair were to be found. They had one remarkable note that particularly attracted our attention. The bird would sit on the top of a bush, every now and then flying up in the air, and utter a note that is best described by saying it was much such a sound as is produced by striking a metal triangle. We first saw the bird May 28th, after which time they were plentiful throughout the lower districts. We found only one nest, owing probably to the excessively wet weather that prevailed during our stay. This was situated in the bank of a ditch, and well concealed.

18. The Whinchat (*Saxicola rubetra*) appeared first May 30th; and after this time a few were always to be seen in the marsh at the back of the town.

19. The Wheatear. *Saxicola œnanthe.*

Very common all over the mountains in the neighbourhood, as elsewhere in Norway. It first appeared May 16th.

20. The Sedge Warbler (*Sylvia phragmitis*) we first saw June 16th. Its haunts seem restricted to some of the warmest and most sheltered valleys. It is far from abundant.

21. The Willow Wren (*Sylvia trochilus*) was common after May 30th, the date of its arrival.

22. The Melodious Willow Warbler. *Sylvia hippolais.*

One specimen of this bird was shot by us; it was the only one that came under our observation during our stay. Its loud and clear note attracted our attention to the spot where it was.

23. The Marsh Titmouse. *Parus palustris.*

One example only of this bird was noticed by us, on June 30th.

24. The White Wagtail. *Motacilla alba.*

Common everywhere, and very tame. In habits and note, the exact counterpart of our English bird.

25. The Grey-headed Wagtail (*Motacilla flava*) we first saw May 28th, when three or four flew over our heads. It was

nowhere very common, though we often came across a pair in the vicinity of buildings.

26. The Tree Pipit. *Anthus arboreus.*

We killed one individual of this species June 2nd, the first day we observed it. After this date their note was constantly to be heard in the marsh.

27. The Meadow Pipit (*Anthus pratensis*) was common in the marsh at Bodö, being there at the end of April.

28. The Rock Pipit (*Anthus aquaticus*) we also found in tolerable abundance on the sea-shore.

29. The Sky-Lark. *Alauda arvensis.*

Abundant in the marsh, and arrived before us. We found a nest May 25th.

30. The Snow Bunting. *Emberiza nivalis.*

The snow had so far melted when first I arrived, that clear patches were here and there to be seen. A flock of Snow Buntings and Mealy Redpolls were sure to be feeding in every bare place. They were extremely tame—probably from the cold, and not from hunger, as some specimens that I shot proved that they found no difficulty in procuring food, being in very good condition. Some were in full summer plumage, others had not yet thrown off the dusky coat they usually wear in England. As the snow melted these birds became less common, and at last left the place altogether.—P. G.

31. The Lapland Bunting. *Emberiza calcarata.*

Only one individual of this species (a male in summer plumage) was noticed at Bodö, May 11th. This was in company with a flock of Snow Buntings and Mealy Redpolls. It was there only two days, so far as I could ascertain.—P. G.

Whilst traversing the Fjeld between the Norwegian coast and the Gulf of Bothnia, we saw several pairs that were doubtless breeding there.

32. The Black-headed Bunting (*Emberiza schœniclus*), of which we found several nests, was by no means rare. We remarked that there appeared to be two sizes of this Bunting. Of

the larger one, which was about the size of our Black-headed Bunting, we only saw one or two examples, and unfortunately failed to get any. The other was a somewhat smaller though similarly marked bird and tolerably abundant. Of this latter we found one nest, and procured birds.

33. The Yellow Bunting. *Emberiza citrinella.*

Two pairs only seen.

34. The Brambling. *Fringilla montifringilla.*

This bird, which we found extremely local in the country that we explored, arrived on May 13th. There were two places, both on the side of a mountain running N.W. and S.E., with a lake at its foot, where they were not uncommon, and in these two localities we found several nests. The birds were extremely tame: in one instance we touched the hen with a gun before she left the nest. They often would not fly away till one of us was halfway up the tree where the nest was situated; but when once off, they left the place altogether, uttering a note of distress. Every nest we found was in a birch-tree, and generally from 15 to 20 feet from the ground. In no instance did the Chaffinch come under our notice.

35. The House Sparrow. *Fringilla domestica.*

A few pairs about the village of Bodö.

36. The Mealy Redpoll. *Fringilla borealis.*

Flocks of these birds were to be seen on the small patches of ground that were free from snow when we first arrived. During the latter part of June and beginning of July we found several of their nests. They were very neatly made, and situated generally in a stunted birch or willow tree. The structure was of fibres and roots lined with the cotton-grass, *Eriophorum angustifolium.*

37. The Twite. *Fringilla montium.*

This bird we saw throughout the summer on an island a short distance from Bodö. We often watched them, but could never discover a nest, though we have little doubt that they were breeding there. We shot a female, in which the eggs in the ovary were considerably enlarged.

38. The Starling. *Sturnus vulgaris.*

Common about the houses.

39. The Raven. *Corvus corax.*

A pair of these birds had young on May 16th, in a cliff in the neighbourhood.—P. G.

40. The Hooded Crow. *Corvus cornix.*

Some of these birds were always to be seen on the sea-shore and among the buildings of the village. There were several nests on the islands close to Bodö, but we only took one. I found a nest ready for eggs April 23rd.—P. G.

41. The Magpie (*Corvus pica*) was by far the commonest bird in the neighbourhood. A nest might not unfrequently be seen on the top of a ladder, or a lot of poles, leaning against a house. We took some eggs from a nest which was not more than 3 feet from the ground.

42. The Three-toed Woodpecker. *Picus tridactylus.*

We shot one specimen near Kop Vaud, in immature plumage. The top of the head was yellow.

43. The Cuckoo (*Cuculus canorus*) was first seen and heard May 28th, and afterwards was always to be heard among the bushes on the hills skirting the marsh.

44. The Swallow (*Hirundo rustica*) arrived June 1st. There were but few about the year we were there, probably owing to the weather, as we were told that in general they came in large flocks.

45. The Capercaillie. *Tetrao urogallus.*

A hen bird flew up from under our feet whilst walking in the forests near Kop Vaud. We looked for the nest, but could not find it.

46. The Black Grouse (*Tetrao tetrix*) was sparingly scattered about the mountains near Bodö. The stunted juniper seemed to be their favourite resort.

47. The Willow Grouse. *Tetrao saliceti.*

Common early in the season among the willow and birch trees in the valleys on the edge of the marsh, but as the summer advanced they retired to the plateaux on the top of the mountains to breed. We found one nest under a juniper bush containing nine eggs. The old bird was so tame that we were obliged to push her off the nest. We afterwards came across three or four broods of young, some of which we caught.

48. THE GOLDEN PLOVER (*Charadrius pluvialis*) first appeared May 1st, when I saw a small flock on the sea-shore in almost full summer plumage. It snowed the whole of the next day, and I saw none for ten days. After this date they were extremely plentiful in the marsh for a short time, when they again disappeared. Throughout the summer a few birds were occasionally to be seen. They probably bred on some of the neighbouring mountains.

49. THE DOTTREL. *Charadrius morinellus.*

This bird made its appearance in flocks far later than the last-mentioned, May 25th being the earliest date we observed them. They stayed about a week, and then all left again. They were so tame, that, whilst walking one night, I was obliged to frighten them out of the road.

50. THE RINGED PLOVER (*Charadrius hiaticula*) was first seen on May 19th, and after this was always to be heard on the eastern shore of the marsh.

51. THE TURNSTONE. *Strepsilas collaris.*

On June 3rd, whilst rowing amongst some islands, we first noticed this bird. We afterwards found five nests, being in every instance attracted to the islands on which they were situated by the cries and motions of the old birds, which they began long before we neared the place. All the nests were cunningly placed, showing no preference for any particular locality. One was on a ledge of a rock; another on the open sand, close to an Oyster-catcher's; two were in the grass; and the fifth under a ledge of rock, well concealed by weeds and grass.

52. THE OYSTER-CATCHER. *Hæmatopus ostralegus.*

In great abundance along the coast and on the islands; they were there when we arrived.

53. THE CURLEW (*Numenius arcuatus*) was to be seen in the

marsh throughout the summer, doubtless breeding in the vicinity, though we never found a nest.

54. The Whimbrel (*Numenius phæopus*), after the 16th of May, was quite as abundant as the last-mentioned species. We found one nest only, June 24th, in which were both young and eggs.

55. The Redshank (*Totanus calidris*) arrived also May 16th. We took several nests. On June 13th, whilst exploring some islands off Bodö, we saw a bird that might have been either the Green or the Wood Sandpiper; but we were not so fortunate as Mr. Tristram in finding the former breeding near Bodö, though we searched every likely-looking locality.

56. The Common Sandpiper (*Totanus hypoleucus*) we first saw May 20th. It was plentiful round the mountain lakes.

57. The Woodcock. *Scolopax rusticola.*

We saw three birds late in the evening fly over our heads, when we were some distance up on the mountains. They were uttering the cry (something like the croaking of a frog) which they generally use during the breeding-season.

58. The Great Snipe. *Scolopax major.*

On walking across the open part of the marsh, on the 26th of May, we flushed the first Great Snipe. This bird had evidently only just arrived, and did not fly more than a few yards before it settled again. Whenever else we observed this species, it was amongst the brushwood on the borders of the marsh. A few days after, as we were returning from a long ramble in the mountains, on pushing our way over some swampy ground covered with birch-wood and dwarf-willow on the edge of the marsh, our attention was attracted by an unknown note of a bird on the ground, somewhat resembling the smack of the tongue repeated several times in succession. At first we thought it must be some animal; but, on remaining still for a few seconds, we saw several Great Snipes walking about and feeding within a few yards of us. We watched them for some time, but they did not appear to take the smallest notice of us.

About the 10th of June we began to search for their nests;

and though we could always find several birds, we did not succeed in finding any nests before June 24th, nearly a month after the birds arrived. About this time we found several places evidently scraped out by a bird as if for a nest, and as they were in a part of the marsh in which we observed no other bird except the Great Snipe which was likely to do this, although we were there almost daily for six weeks, and as they were invariably in exactly similar places to those in which we subsequently discovered the nests of the Great Snipe, we can attribute them to no other bird. Although we carefully looked at these scrapings several times subsequently, we never found any eggs in them; but on one occasion we took a nest with four eggs about 6 yards from one of these places.

The first nest we found contained four eggs, and was placed on the edge of a small hillock, quite open, though there were dwarf birch-trees growing all round, and one on the very hillock on which the nest was situated. It consisted of nothing more than a hole scraped in the moss, in which the eggs were deposited; there were neither grass nor leaves in it. After a minute examination of it, and carefully marking the place, we went away to fetch our guns, the rain descending in such torrents that we were not carrying them that day. On our return in half an hour, the bird was again on the nest. We put it up and shot it. It proved to be a female. The eggs were very slightly incubated. The next day (June 25th) we found another nest within 200 yards of the former, containing only two eggs, and as we thought the bird would be sure to lay more, we marked the place and left it. It was situated on a small hillock, and much in the same sort of place as the former. We found another nest on the 27th of the same month. The bird fluttered off and ran away, dragging its wings on the ground, and making a sort of drumming noise. After taking four eggs from this nest, we returned to look at that found on the 25th, which contained two eggs. We walked directly to the spot, and what was our horror at seeing nothing in the place but some apparently disturbed moss! Our first impression was that the eggs had been destroyed by the Magpies or Crows that were constantly hunting for such food, or perhaps taken and eaten by one of the many boys who wandered about the marsh tending cattle; but on our beginning to express our fears, the bird, doubtless frightened by our voices, flew up, leaving a hole in the moss through which we could see there were still only two eggs as before. Not doubting, however, that the bird would yet lay more, we again left it, and returned in a couple of days. On approaching the spot, we observed the nest was again covered with moss. This time we remained for a minute before the bird flew off, and on stooping down to examine it more closely, we could distinctly see the bird's back through the moss. Not liking this close inspection, it flew up, and we took the eggs, which proved to be only within a day or two of hatching. The bird had evidently, after it was comfortably seated on its nest, torn up, with its long beak, the moss within its reach, and drawn it over its back till it was completely covered in the way described: there was not the least appearance of any hole through which the bird could have crept into its nest. This circumstance of the nest being covered is the more curious, as out of six we found, it was the only one thus carefully concealed. There were probably as many as ten or fifteen pairs of these birds in the marsh, which usually kept pretty close together, and were generally to be found in one particular spot. Could this have been a congregation of male birds, the mates of which were breeding in the vicinity?

Mr. Wolley obtained a nest with four eggs from this locality the same year, but unfortunately the eggs were much broken.

We saw the bird occasionally on swamps in the mountains, but it would have been a hopeless task to have searched for its nest there, though we have little doubt it breeds in other localities in the neighbourhood.

The down of a young bird of *Scolopax major* which we prepared and brought home is not nearly so dark as that of *S. gallinago*.

59. THE COMMON SNIPE. *Scolopax gallinago.*

During a heavy snow-storm on May 5th, my attention was attracted by a note sounding like "*ekke*," repeated several times, and evidently proceeding from a bird on the ground. On shooting it, I found it to be a Common Snipe. I frequently heard it uttering the same noise afterwards, and always on the ground. —P. G.

We took one nest on May 26th.

60. THE JACK SNIPE. *Scolopax gallinula.*

While looking for Great Snipe on a very wet day in July, a Jack Snipe flew up from under our feet. We both saw the bird, and were convinced it belonged to this species; but though we searched the same locality subsequently very closely, we could not again find it.

61. TEMMINCK'S STINT. *Tringa temminckii.*

A flock of this Stint passed Bodö, staying a few days, from which we obtained some specimens on May 15th.

62. THE DUNLIN (*Tringa variabilis*) was first noticed May 16th, and after this date was common in the marsh.

I thought I saw a Sanderling on the same day.—P. G.

63. THE PURPLE SANDPIPER. *Tringa maritima.*

I shot some examples May 4th.—P. G.

The bird was to be seen on the islands in the neighbourhood throughout the summer.

64. THE LANDRAIL. *Gallinula crex.*

The note of this bird was constantly to be heard in the grass-lands bordering on the marsh. We killed one bird June 16th, the first day we heard it.

65. THE WHITE-FRONTED GOOSE. *Anser albifrons.*

On our first arrival we frequently saw small flocks of from seven to ten White-fronted Geese feeding in the pools and creeks of the marsh. These, however, all took their departure towards the end of May. On the neighbouring islands we found another species breeding, and obtained four eggs, which unfortunately we were not able to identify. The birds on these islands were strictly preserved for the sake of the eggs, and the eider-down collected on them; and we were not allowed to shoot, nor could we obtain permission to leave the eggs and watch the bird on to the nest.

66. THE COMMON SHIELDRAKE. *Anas tadorna.*

On May 19th we saw a pair a short distance from Bodö, and subsequently found them breeding on some islands called Helligvær, about eight miles out to sea.

67. The Wild Duck. *Anas boschas.*

But few seen: one nest taken.

68. The Teal. *Anas crecca.*

Some always in the marsh on our first arrival, but after the beginning of May they disappeared. We saw them at Helligvær, and the people who collected eggs told us they bred there.

69. The Wigeon. *Anas penelope.*

Also seen at Helligvær, where we were informed they stayed during the summer.

70. The Eider Duck. *Anas mollissima.*

The commonest Duck about Bodö, where they are preserved for the sake of the down collected from their nests. We found some pairs breeding on a marsh by a freshwater lake, about seven miles from the seashore.

71. The Common Scoter. *Anas nigra.*

We saw some on the Salten Fjord soon after our arrival, but during the summer none came under our notice.

72. The Tufted Duck. *Anas fuligula.*

Two pairs seen on Kop Elo.

73. The Long-tailed Duck. *Anas glacialis.*

Very common on the sea when we first arrived. During July we saw a large flock of males only on the Kop Elo.

74. The Golden-eye Duck. *Anas clangula.*

Two pairs only of these Ducks came under our notice, which were on a lake six miles from Bodö.

75. The Red-breasted Merganser. *Mergus serrator.*

Common in the vicinity of Bodö, breeding on the islands. We took several nests. It was there on our arrival.

76. The Goosander. *Mergus merganser.*

A flock of five were seen flying over one of the islands.

77. The Black-throated Diver. *Colymbus arcticus.*

But few came under our notice. We took one nest on a small island close to the shore of an inland lake.

78. The Red-throated Diver. *Colymbus septentrionalis.*

Almost every lake had its pair of these birds, and we collected many eggs.

79. The Guillemot. *Uria troile.*

We observed one example only.

80. The Black Guillemot (*Uria grylle*) was everywhere to be seen along the coast; the eggs are considered a delicacy by the natives. This bird winters in these latitudes.

81. The Common Cormorant (*Carbo cormoranus*) abounded on all the islands; and we found them breeding indiscriminately with the following species,

82. The Shag. *Carbo cristatus.*

83. The Arctic Tern. *Sterna arctica.*

We shot some specimens of this bird, which breeds the whole way up the west coast of Norway.

84. The Common Gull. *Larus canus.*

85. The Lesser Black-backed Gull. *Larus fuscus.*

86. The Herring Gull. *Larus argentatus.*

87. The Greater Black-backed Gull. *Larus marinus.*

There were large numbers of these four species on all the neighbouring islands.

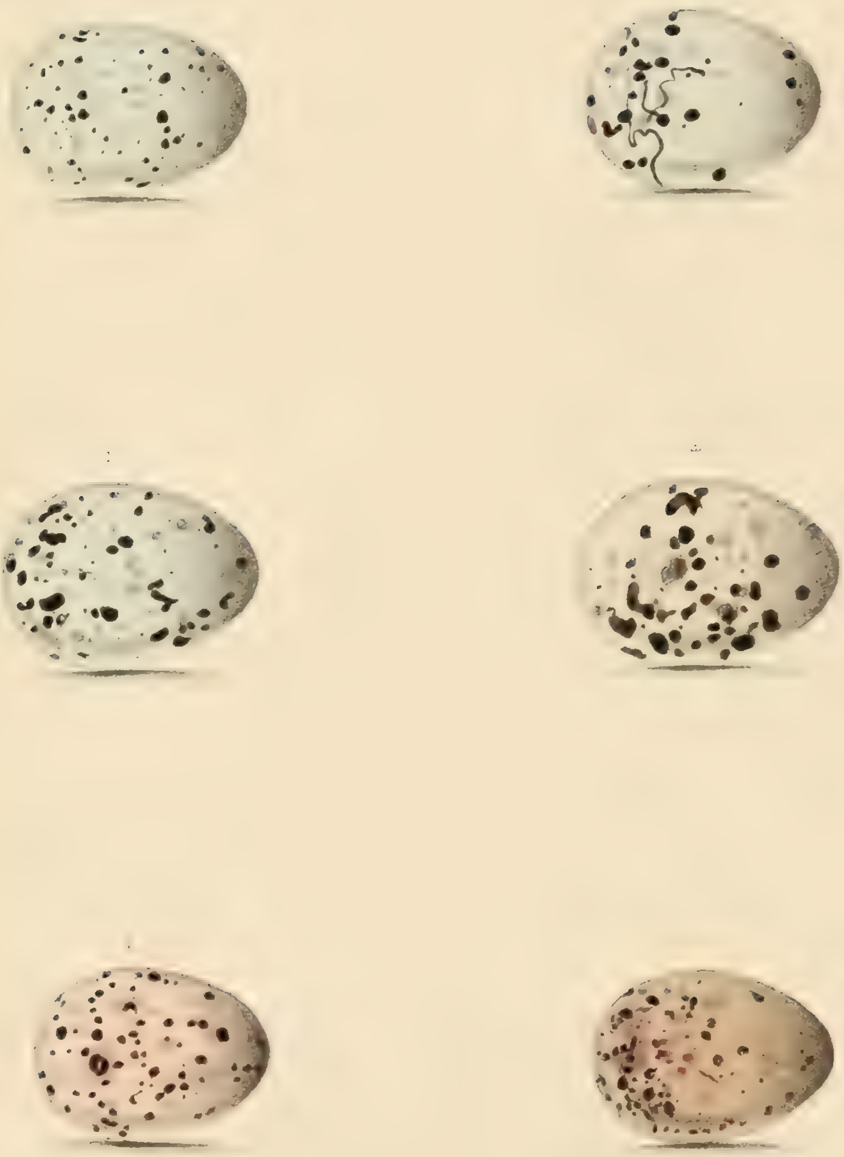
88. Richardson's Skua. *Lestris richardsonii.*

First seen May 16th; afterwards abundant, breeding on many of the islands. A pair were also frequently observed on a small marsh near the lake where Eider Duck and Gulls were breeding. Among the many specimens that we preserved, we noticed that the variety of plumage was in no way dependent on the sexes of the birds.

VIII.—*Particulars of* Mr. J. Wolley's *Discovery of the Breeding of the Waxwing* (Ampelis garrulus, *Linn.*). By Alfred Newton, M.A., F.L.S.

(Plate IV.)

It is well known to many of the supporters of 'The Ibis' that it had been the intention of the late Mr. John Wolley to con-



EGGS OF AMPELIS GARRULA.

W. C. Hewitson del. et lith.

Printed by Hullmandel & Walton

tribute to its pages the particulars of his discovery of the breeding of the Waxwing (*Ampelis garrulus*, Linn.), and that in the spring of 1859 he had selected from his extensive series some specimens of its eggs, which he handed over to Mr. Hewitson,—that gentleman having kindly consented to execute a plate in illustration of the paper. Mr. Wolley's failing health prevented him from carrying out his design, and I have therefore thought it incumbent upon me, as the inheritor of his collection and papers, to supply the deficiency as far as I am able. I shall in a great measure tell the story in his own words, believing that in so doing I shall not only lessen the chance of error, but that thereby I shall best consult the wishes of my readers.

It is unnecessary to repeat here the fabulous accounts given by former writers respecting the nidification of this bird. The very plain statement communicated by Mr. Wolley to the Zoological Society, on the evening of the 24th of March, 1857, is sufficient to set them at rest for ever*. But still I may remark, that from the days of Linnæus (who said of it, "*nidus in rupium antris*†"), downwards, nearly all the conjectures published seem to have been wide of the mark. In years gone by, one of the hardiest of our Arctic explorers, Sir John Richardson, had failed to ascertain anything connected with its breeding in the Fur-countries of the North-West‡, and, more recently, the intrepid Siberian traveller, Dr. A. von Middendorff, was equally unsuccessful in the North-East§. Yet it may be safely said that there was no bird whose egg was so longed for by the oologists of the whole world. Various were the plans they bethought them of for attaining this *desideratissimum*. Many tried to keep pairs of living birds, in the hope of inducing them to breed in confinement. One enthusiastic egg-collector, Baron R. von König-Warthausen, we are told, even went to the trouble of caging a whole flock*. It is true that here and there an oologist might be found, with whom the "wish was father to the thought," and who accordingly deluded himself into the belief that in some unusually large specimen of the egg of the allied species (*Ampelis cedrorum*), or in some queerly-coloured monstrosity of a bird perhaps not at all connected, he recognized a genuine production of *Ampelis garrulus*; but such instances were certainly exceptional, and there can be little doubt that, prior to 1856, no one with any pretension to the title of naturalist had ever set eyes on a real egg or nest of the Waxwing, and that this privilege was reserved for one who of all men eminently merited it. It is due, however, to Scandinavian naturalists to say, that several of them who had travelled in Lapland had expressed themselves confident that the bird did sometimes breed in that country; and though the reports of its nesting, which some of them brought home, have been shown by Mr. Wolley's discovery to have been probably incorrect,† yet it was, I think, reliance on the general fidelity of those gentlemen in matters of this kind which kept alive my friend's hopes of one day finding the long-sought treasure; but hopes they were of a kind so remote, that when they were fulfilled he was justified in speaking of the discovery as "unexpected."

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* Proceedings of the Zoological Society, 1857, p. 55. A notice of this paper is inserted in the Athenæum newspaper for April 4, 1857, no. 1536, p. 441, and also in Wiegmann's Archiv für Naturgeschichte, 1858, ii. p. 24; an abstract of it is printed in the Literary Gazette for April 4, 1857, no. 2098, p. 334; and it is published almost entire in the Annals and Magazine of Natural History, 2nd ser. vol. xx., p. 308, and in the Zoologist for 1857, p. 5754. In the "Memoir" of Mr. Wolley, printed in 'The Ibis,' 1860, p. 181, the date is erroneously given "March 26th."

† Systema Naturæ, ed. 13 (*curâ* Gmel.), vol. i. pt. 2. p. 838.

‡ Fauna Boreali-Americana, ii. p. 238.

§ Sibirische Reise, II. ii. p. 157.

The first intimation I received from Mr. Wolley that the discovery was accomplished was contained in a letter written by him on his way up the Baltic, and dated 2nd Sept. 1856. He says, "Let me tell you now, whilst I think of it, that I have some reason for believing that the Waxwing makes its nest in good-sized fir-trees in the month of June. I give you this hint in case I should not live to give you more certain information;

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* Dr. E. Baldamus in 'Naumannia,' 1858, p. 131.

† Compare J. W. Zetterstedt, Resa gen. Sw. och Norr. Lappm. i. p. 272. 'Tidskrift för Jägare,' W. von Wright, p. 289; C. U. Ekström, p. 706; G. A. Bergenstråle and J. Holmstedt, p. 726; A. Wigart, p. 1087. L. Lloyd, Scand. Advent. ii. p. 312. H. D. J. Wallengren, in 'Naumannia,' 1854, p. 123. S. Nilsson, Skand. Faun. Foglarna, ed. 3. i. p. 242.

but you remember that I am not to return home without a Waxwing's nest in my hand." He had, in fact, a few days before, when at Stockholm, received from his faithful Ludwig a letter telling him of the discovery, in which Ludwig had himself assisted, and respecting the truth of which he said, his "Master must be quite sure—without doubt." Mr. Wolley, however, forbore to allow his own or my expectations to be raised too highly, and in spite of his receiving confirmatory evidence on his arrival at Haparanda and on his way up the river, it was not until he had reached Muoniovara, and had satisfied himself by repeated investigation of the whole story, that he trusted himself to write to me positively. His letter, dated "Muoniovara, 14 Sept. 1856," after describing his own doings and those of the friends I had made the preceding year, telling me of the expected scarcity of food, and giving the general results of the nesting season, goes on to say:—

"I have still to tell you of Ludwig's expedition with Piko Heiki to Sardio, on the Kittila River. It was early in June, and he had to wade over Pallas-tunturi up to his middle in snow. Arrived at Sardio, he found the lads there all at home, deep in dirt and laziness. He soon extracted from them the information that a pair of birds had been seen about, which they took to be *Tuka rastas*; and Ludwig himself had seen such a bird, and this bird's egg was entered in my list. * * * Ludwig immediately started off into the forest, and sure enough he saw a bird which he thought was *Sidensvans*; but he was not quite sure, for the end of its tail looked white in the sun instead of yellow as in your picture *: but the next day, or in the evening, it was cloudy, and Ludwig saw the yellow; and now he had no longer any doubt. He said he would give all the lads day-money, and they must all search, even if it were for a week, till they found the nest. They sought all that night and the next day till about midday, [when] a lad called out that he had found the nest; and there it was, with two eggs, about nine feet high, on the branch of a Spruce. * * * After five days

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* This picture was one of several coloured sketches of different birds sent to Mr. Wolley by Mr. Hewitson and myself, to assist him in making known his wants to the natives.

Ludwig snared the old bird—a beautiful cock; and you may fancy with what pleasure I took it in my hand, and saw that there were no doubts remaining. Indeed, I had before been pretty confident about it: Ludwig had written that I might be quite satisfied that it was the right bird. Martin Pekka had the picture with him at Sodankyla, and as soon as he came back Ludwig compared the bird with it, and made certainty doubly sure. The other picture went to Gellivara. * * * I do not expect Waxwings in that quarter. You can fancy how eagerly I waited for Ludwig to produce the eggs. With a trembling hand he brought them out: but first the nest, beautifully preserved; it is made principally of black 'tree-hair' (lichen), with dried Spruce twigs outside, partially lined with a little sheep's-grass and one or two feathers,—a large deep nest. The eggs—beautiful!—magnificent!!—just the character of the American bird. An indescribable glow of colour about them! Ludwig had made for them such a box, that even if a horse trod upon it it would not break. He tells me he happened to say that they were most like '*Sawi-rastas*' (Common Thrush), and any one wishing to cheat should try that. The report seems to have spread, without the name of its originator being given; for in a week or two after, the notorious Sallanki Johan brought a *Korwa-rastas* (Waxwing), 'shot from the nest,' with its eggs,—the eggs being, as Ludwig at once saw, Common Thrush's. The next incident was the arrival of Johan's brother, the still more notorious Niku, but this time with a couple of young birds scarcely able to fly, which he had caught, as he said, out of a brood of five, by Pallas-tunturi. One of these Ludwig has stuffed, and a rare little beauty it is; the other was much knocked about, and Ludwig made nothing of it. Then a little girl, just ten days ago, brought three eggs from the other side of Nälima (about twenty-five miles from here), which she said were taken on a certain day in July, and were '*Kukhainen*.' They were undoubted Waxwing, but are very badly blown by her as they were just hatching. At midsummer, Sardio Michel brought in a small batch of *Sidensvans*, with the birds (four in number) to each nest. So now I have a series, though but a very short one, of this *rara avis in terris*—this forerunner of famine, and of infinite value when one thinks of the uncertainty of getting it again. At the same time I should tell you the Sardio lads found a nest which they believed to have been a last year's *Korwa-rastas.* On this river no one has seen the bird of late years, and very few know it at all. One old fellow, Nalio Aaron, says he saw one north of Nälima in 1853, and another in 1854. Martin Pekka showed the picture to many people in the Sodankyla and Kittila districts, but he could not make out that the bird was at all known, and in all his journey, when he kept a good look-out, he did not see one; so that even this year it seems to have come very sparingly and locally—just in the district north, east, and south of Pallas-tunturi. In 1853 I told you of a boy, Sieppi's Johan, who described a nest of birds he had found some years ago, which, from my interpreter's version, I thought might be that of the Waxwing. This boy, on being shown a skin, said he had never before seen the bird.

"It is a relief to think that I am not bound to go to Russia next spring unless I like it, as I before felt that I was. I almost think I may leave the unbounded riches of the Nova Zembla coasts and of the north of Siberia—their Steller's Duck, Curlew Sandpiper, Little Stint, Knot, Sanderling, Grey Plover, Grey Phalarope—to younger adventurers.

* * * * * *

"Almost every day (and it is now the sixth since that of my arrival here) Ludwig has told me the whole story of the *Sidensvans'* nest, and I am never tired of hearing it:—How the season was very backward; how, in their expedition, he and Piko Heiki were getting very much out of spirits at the little success they met with. How he saw this bird in the sunshine. How, when at last the nest was found, he could scarcely believe his eyes; how he went to it again and again, each time convinced when at the spot, but believing it all a dream as soon as he was at a distance. The rising and falling of the crest of the bird, its curious song or voice—all he is eager to tell over and over again; and I have the fullest version, with all the 'I said,' 'Heiki said,' 'Michel said,' 'Ole said,' &c. These Sardio lads, as you have heard me say formerly, have a good knowledge of the small birds of their neighbourhood, but they are none of them sure whether they have ever seen *Sidensvans* before. As I have also told you, it seemed to be known to a very few wood's-men on that side of the country under the name of '*Korwa-rastas*' or '*Korwa-lintu*' (Ear-bird). It had occasionally attracted their attention, as having feathers on its head standing up like squirrel's ears. It was not till the second year of my stay here that I ascertained this with certainty. The first summer I believed it to be '*Harrhi*,' a bird coming in bad seasons, and properly the Common Jay; but it seems that this name is also really sometimes given to *Sidensvans*, and therefore, as well as for other reasons, I am inclined to believe that the bird is only here very occasionally. * * * *

* * * "The young Waxwing I should wish our old friend Yarrell to describe, for I think it would give him pleasure. He might exhibit a nest and eggs at the same time with a pair of the birds in breeding-plumage to the Zoological Society; but, for special reasons, I should wish the Waxwing not to be talked about till the spring."

Mr. Yarrell's death having prevented Mr. Wolley's wish from being carried out, the announcement of the discovery was communicated to the Zoological Society, in the short though very comprehensive paper I have before alluded to, at their meeting on the 24th March, 1857, the specimens being exhibited by my brother Edward. They consisted of two nests—one of which (the original of the figure in the 'Illustrated Proceedings'*) was afterwards deposited, with an egg, in the British Museum, while the other was presented (also with an egg) to the museum at Norwich, the authorities of which had for some time past taken a warm interest in Mr. Wolley's researches,—a pair of birds in their breeding-plumage, the nestling before mentioned (all three of which are now at Norwich), and some seven or eight examples of the egg. Of these latter, the two figured in the plate in the 'Proceedings' were subsequently sold at Mr. Stevens's rooms, and purchased by Sir William Milner, in whose collection they still remain. A third, sold at the same time, became the property of Mr. Henry Walter; and specimens were given to Mr. Wilmot, Mr. W. H. Simpson, and myself.

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* Illust. Proc. Zool. Soc. 1857, Aves, pl. cxxii.

In all, Mr. Wolley obtained twenty-nine eggs of the Waxwing in 1856. Later on in the autumn, an intelligent Lapp informed him that he remembered having seen a bird some twenty years before, and once or twice since had seen or heard another, but that was perhaps ten years previously. On the other hand, in 1856 he had seen them some half-dozen times, and found a nest, from which, however, the young ones flew. This nest he subsequently brought very carefully, with the branch on which it was built, to Mr. Wolley, by whom it was sent the following year, by the hands of Dr. Edwin Nylander, to the museum of the University of Helsingfors. The Lapp added that in the spring he had observed of the birds that "they flew up in the air, and came and sat in the same spot whence they had flown—he thought in play; but perhaps they were catching insects," as Mr. Wolley himself suggested.

In 1857, it seems that the Waxwing was still more rarely distributed in Lapland than it had been the preceding year. Mr. Wolley was of course exceedingly desirous of taking a nest with his own hands, and for this purpose devoted to the search much of his time before crossing the district hitherto unexplored by him between the Muonio valley and the head-waters of the Tana. In this object he was only partially successful. He writes, "For myself, I could not, in spite of every exertion, get a living Waxwing within range of my pair of eyes. I took a nest which had been deserted a day or two before, and from which something had thrown the eggs, one after another, upon the ground as fast as they were laid; of course, broken to bits. It was close to the house at Sardio. In vain I wandered through the woods, and scarcely shut my eyes at night. Many people were on the look-out; but, after the nest of three eggs I told you of from Jerisjärvi, the only arrival has been a perfect nest of five eggs found by Piko Heiki, whom I desired to give up everything else, and work all the mountain-district for Waxwing." The nest thus taken by Mr. Wolley, and which I intend to retain in my possession, as being the only one taken by him, bears date "16th June, 1857." It was built in a Spruce, and agrees in most respects with those previously seen and described by him. The eight eggs just mentioned were the only ones obtained by him that year; for, though another nest with five eggs was taken for him by one of his most trusty collectors on an island, Ajos-saari, in the Gulf of Bothnia, near Kemi-suu (the mouth of the Kemi River), the finder was induced to part with it to a Russian traveller for three silver rubles, "the doctor having represented that Mr. Wolley had already as many as he wanted," a statement certainly not in accordance with the facts; for Mr. Wolley had, in giving him a nest, promised that, if he had them to spare the next year, he would transmit specimens of the eggs to the museum at Helsingfors. This same person, whose zeal might have been commendable had it been qualified by either gratitude or good faith, previously informed Mr. Wolley that a naturalist in the Finnish capital had for some time offered a reward of fifty rubles (about £9) for a nest of the Waxwing, and suggested that the Sardio lads were entitled to the prize: whereupon Mr. Wolley immediately divided that sum (in addition to the some hundred dollars they had already received) among all who were engaged in the glorious affair of the 7th of June, 1856, and at the same time wrote to the University of Helsingfors to say that he could not allow its authorities to pay for his discovery. A brief notice of the booty acquired by Dr. E. Nylander will be found in the Appendix to the last edition of Professor Nilsson's excellent work*, communicated to him by Professor Alexander von Nordmann, who also furnished a more detailed account to the 'Journal für Ornithologie' for the following year, illustrated with figures from the specimens thus obtained†.

The summer of 1858, when Mr. Wolley was with me in Iceland, was "a great year for Waxwings." Not far from a hundred and fifty nests were found by persons in his employment in Lapland, and some of them close to Muoniovara. It seems, as nearly as I have been able to ascertain, that no less than six hundred and sixty-six eggs were collected; and more than twenty more were obtained by Herr Keitel of Berlin, who happened, without I believe any expectation of the luck that was in store for him, to be that year on the Muonio River. A detailed account of Herr Keitel's success appeared some months after in the 'Naumannia[*],' from the pen of its editor, and the specimens of the eggs figured in that magazine were obtained through him. It is unnecessary for me to go into details respecting the magnificent series of eggs which Mr. Wolley was thus enabled to add to his cabinet. The nests were built mostly in Spruce and Scotch-fir trees (*Pinus abies* and *P. sylvestris*)—chiefly, I think, the former. The usual complement of eggs is certainly five; but six not uncommonly, and seven and four occasionally, were found. The second week of June seems to be the general time for the birds to have eggs; but there are some which must have been laid in the last days of May, and others (perhaps second broods) a month later[†]. Of the different varieties into which the egg runs, the accompanying illustration (Pl. IV.), in which Mr. Hewitson's able pencil has represented the half-dozen examples I before mentioned as selected by Mr. Wolley, will give a far better idea than anything I can say. I may, however, state that those depicted in figures 1 and 4 are considerably above the average size, and are characterized by a bolder style of blotching than usual. Fig. 2 is perhaps the most typical in appearance, and, except in size, almost exactly resembles an ordinary Cedar-bird's. Fig. 3 displays a somewhat rare variety, in which linear markings, such as are seen in the eggs of many of the *Emberizinæ* and *Icterinæ*, more or less prevail. Fig. 5 represents a not unusual form with a dull-olive ground-colour, resembling in this respect curiously enough the egg of an Australian bird of the same family, *Pachycephala pectoralis*[‡], of which there is a specimen now in Mr. O. Salvin's collection. The example drawn in fig. 6 stands, to the best of my belief, for the variety to which Mr. Wolley in his paper before mentioned applied the term "salmon-colour," which appellation has been demurred to by other naturalists. The matter I think is explained by the fact, which I know from my own intimacy with him, that Mr. Wolley's sight did not fully appreciate the colour red, or clearly determine when red did or did not enter into the composition of another hue. I have now before me a sketch made by him of one of the eggs obtained the first year, in which he has painted the ground of a bright pinky-orange—decidedly salmon-colour; but I have been unable to detect the original of this drawing in any of the eggs of that year, all of which I believe I have at some time or another seen; and of the vast series now in my possession there is not a single specimen which, in my opinion, at all approaches "salmon-colour." I therefore, knowing how careful he always was in the choice of his words, can only attribute his making use of that term to this slight defect in his vision; and that this defect existed I had proof more than once; and, indeed, on one occasion he told me he had satisfied himself of this tendency to "colour-blindness" where anything like red was concerned. The original of fig. 6 is certainly of a warmer tint than is usually found; but my series is not without several examples of it. I also possess some specimens of a pale and very beautiful variety, almost destitute of dark spots, but with large blotches of tender lilac. Excepting in the case of the American allied species, and the Australian bird before mentioned, I know of no eggs which can be said to bear any *close* resemblance to those of the Waxwing.

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* Skand. Faun. Foglarna, ed. 3, i. p. 571.

† Journal für Ornithologie, 1858, p. 307; 1859, pl. 1.

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[*] 'Naumannia,' 1858, p. 498. pl. 1. figs. 5–8.

[†] The American species would seem sometimes to breed much later in the season. Dr. Brewer told me at Boston, August 31st, 1857, that on the preceding day he had seen a Cedar-bird's nest, with eggs still unhatched.

[‡] Gould, Birds of Australia, ii. pl. 67.

This same year (1858) saw an Englishman, however, accomplish what Mr. Wolley only partially succeeded in doing. The interesting account of an independent discovery of the breeding of the Waxwing, with which the kindness of Mr. H. E. Dresser has furnished me, will, I am sure, be read with pleasure, and I leave that gentleman to narrate his exploit in his own language:—

"In 1858 I was a short time in Uleåborg, while on my way from Stockholm *viâ* Torneå to St. Petersburg, and having a little time on my hands, I spent it in company with Mr. John Granberg of Uleåborg, collecting in the neighbourhood of the town. We intended to pass a day or two amongst the small islands near the harbour, and determined to visit one called Sandön, about four Swedish (twenty-seven English) miles from Uleåborg.

"We (that is, Granberg, a student by name Heikel, and myself) left the town on the evening of the 3rd of July, in a little boat, and sailed to Warjakka, an island outside the harbour, where we provisioned for our trip. We then started for Sandön; but, there being but little wind, did not arrive off the island until about two o'clock in the morning. We grounded at some distance outside, and all three stripped for a swim, to find some deeper water; but, not being able to get the boat much nearer, we made her fast and carried our traps on shore, getting almost devoured by mosquitoes in so doing. We had heard that there was a rough log-hut somewhere on the island, built by the Karlö peasants, who come annually to take away the marsh-grass, and accordingly set off in search of it. We were crossing a small open place when we started a bird, which Granberg, who was on first, said was a Waxwing (*Ampelis garrulus*), and having my gun loaded with dust-shot, I followed it up and succeeded in shooting it. It proved to be an adult female, and had evidently been incubating. We searched all the bushes and trees near, in hopes of finding a nest, but without any success; and as the mosquitoes were very troublesome, we determined to find the hut, take a nap, and continue the search afterwards. We soon did find it, and after smoking out the mosquitoes and stopping up the smoke-hole, turned in on some marsh-grass, and did not awake until pretty late in the day. After breakfast we separated to explore the island; and Heikel and myself, meeting soon after on the opposite side, went on in company, but had no success, only finding a few small birds. * * *

"We had quite given up all hopes of finding the Waxwing's nest, when, as I was crossing a little barren to join Heikel, I saw, in a small pine-tree close to where he was standing, a nest with several young ones in it sitting bolt upright, just as Grebes sit. Going nearer, I instantly knew them to be Waxwings. We threw off our game-bags, and, while he stood below, I climbed up to the nest, which was in the fork between the main stem and the first branch, and not above nine or ten feet from the ground. The moment I touched it, the young ones (five in number) flew out. I jumped down, made a cut at the largest with my cap, and secured him; but Heikel did not get one. Directly the young one which I had caught began to cry out, several Waxwings flew from the neighbouring thicket, all however keeping out of gunshot except two, which came close round me, and both of which I shot. I then sat down and imitated, as well as I could, the call of the old birds. I was soon rewarded for my trouble by a young one coming out of a Blueberry bush close by and calling lustily. Heikel and I gave chase, and secured him. Granberg, who had heard my two shots, then coming up, we commenced a diligent search for the other three young ones, but had to give it up as hopeless, owing to the thickness of the under-scrub. I then climbed up again and took the nest away carefully, so as to preserve the shape, and to my great delight found one egg in it. We hunted for several hours in the higher part of the island for another nest; but, although we saw about nine old birds, we did not succeed in finding another nest. We did not shoot any more, hoping to find nests there at some future period.

"We returned to Uleåborg the same evening, when I skinned my birds. We ought to have made an equal division of the spoil, but neither Granberg nor Heikel would hear of any division; consequently I have still two old birds and two young ones, besides the nest and egg, in my possession. I regret to say I did not look to see what the young birds had been fed upon; but when I took the nest, I found one or two of last year's dried cranberries in it.

"I arranged with Mr. Granberg for him to go to Sandön in 1859 (for we had kept it secret in the town as to where we had found the nest) to see if he could find another nest; but he wrote to me that, the autumn after we had been there, the chief portion of the forest in Sandön had been consumed by fire, and that it was therefore useless to go there."

I myself had the pleasure of inspecting Mr. Dresser's specimens in 1859 at Mr. Leadbeater's, and I believe I am hardly divulging any confidence when I say they have formed the subject of a beautiful picture, executed under Mr. Gould's superintendence, which I trust will before long be rendered more accessible to the public.

In 1859 the Waxwing bred, but in no great numbers, in the Muonioniska and Kittila districts. Though much sought for, not more than forty-six eggs were obtained by Mr. Wolley's collectors.

During the past summer it seems to have been rather more numerous. I am told of fifty-two eggs having been collected for me by the agents of my late friend, whom I keep in my own employment, but these specimens have not hitherto arrived. Early in the present year, Mons. C. F. Dubois described and figured the egg of the Waxwing in the 'Revue et Magasin de Zoologie *,' but without stating whether his example had been obtained from Mr. Wolley, or derived through another source. M. Dubois states that its egg "ressemble beaucoup à celui du *Coccothraustes vulgaris* et du *Lanius ruficeps*; il peut facilement être confondu avec les œufs de ces derniers." In this latter assertion I do not agree with him. Out of the several hundred specimens which form the series I possess, there is not one, I think, which could be taken for that of either the Hawfinch or the Woodchat Shrike, though I freely admit there is a likeness to the eggs of both †.

Thus much have I to record of the particulars of this discovery, which, I think, had been looked forward to by collectors all over the world as by far the most interesting that could be made. It is indeed somewhat surprising that the nidification of a Passerine bird generally known throughout the greater part of three quarters of the globe, and which had been sought for even in its most inhospitable regions once and again by the most venturesome of voyagers, should so long have remained enveloped in mystery. But I also think that few of his brethren in science will grudge the original finder the honour he merits; and writing these words as I do on the first anniversary of the day which saw his removal from amongst us, I do not hesitate to declare my belief that no one of the many earnest fellow-workers with whom it is my privilege to be associated better deserved a distinction than did John Wolley that which this one discovery will always associate with his name.

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* Revue et Magasin de Zoologie, Février 1860, p. 64. pl. 2. fig. 4 (miscalled on plate "Bombycilla cærulea").

† Since the above was in type, I have seen No. 1, for 1860, of the 'Bulletin de la Société Impériale des Naturalistes de Moscou,' which contains an interesting notice by Prof. Alex. v. Nordmann of the Birds of Finland, as observed by his son Arthur. It is therein mentioned (page 21) that the Helsingfors Museum contains five nests, with eggs, of the Waxwing, and that "Studiosus Malmgren" had brought its young from Kajana.

Elveden, 20th November, 1860.

IX.—*Recent Ornithological Publications.*

1. English Publications.

The 30th number of Mr. Bree's work is just issued, and completes the second volume of 'The Birds of Europe not observed in the British Isles.'

2. French Publications.

We have received the 'Revue et Magasin de Zoologie' up to No. 10 for 1860. Dr. Sacc's article "sur les Poules de Nankin dites de Cochinchine" (p. 329 *et seq.*) contains more economical than zoological information concerning this exaggerated variety of the Domestic Fowl, which seems to have originated in the warmer portions of the interior of China. Like the Chinese Sheep, its great value consists inits extreme prolificness. In 1858, Dr. Sacc informs us, the number of eggs laid by five pairs of Cochinchinas amounted to no less than 732, or 146 for each hen! In their essay "on the Birds of New Caledonia," in Nos. 9 and 10, MM. Jules Verreaux and Des Murs have made an important contribution to our knowledge of geographical distribution, and have also introduced us to the acquaintance of several novel and interesting forms. Their article is founded on materials furnished by a collection of the natural products of this new French colony, made under the superintendence of M. Saisset, commander of the French naval forces in the Pacific, which has been deposited in the "Exposition des produits des colonies," now on view in the Palais de l'Industrie in the Champs Elysées at Paris. The series of birds there exhibited, taken in connexion with the species indicated by previous authorities on the subject*, give us the number of 76 species now ascertained as belonging to the Avifauna of New Caledonia; of which no less than 45 are, as far as is hitherto known, peculiar to that island. The most noticeable types are *Nymphicus* (*Psittacidæ*), *Phænorhina* (*Columbidæ*), and *Rhinochetus*[*] (*Ardeidæ*). The last of these (which MM. Verreaux and Des Murs now describe for the first time) is certainly very curious, and appears to be quite distinct from any known form. Although, as it is remarked, only 18 species of New Caledonian birds are identical with those of Australia, we may observe that there is much of the Australian character in the presence of such genera as *Trichoglossus, Pachycephala, Artamus, Campephaga, Acanthiza, Glycyphila*, &c., and that we cannot therefore regard this island as belonging to a zoological region distinct from the mainland of Australia. With regard to *Gazzola typica*, we have already shown that this bird is found in Celebes[†], and there is no doubt that the habitat "New Caledonia" attributed to it in the Paris Museum is erroneous, as is well known to be the case with many other localities commonly assigned to objects brought back by the French exploring expeditions[‡].

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* Sclater in 'Ibis,' 1859, p. 27, and G. R. Gray in Proc. Zool. Soc. 1859, p. 160.

M. J. P. Coinde, who has already, as he reminds us, distinguished himself by describing as new a "*Bombycilla*" from "Mexico and Yucatan," which we believe to be probably nothing more than *Ampelis cedrorum*, now gives us (p. 396) a "notice sur la Faune ornithologique de l'île de Saint Paul," in the Northern Pacific. Among the nine species of birds, chiefly marine, here enumerated, is a supposed undescribed Gull—*Larus warnecki*, allied to *Larus tridactylus*, but possessing a hind-toe!

3. GERMAN, DUTCH, SCANDINAVIAN, AND RUSSIAN PUBLICATIONS.

The first number of the 'Archiv für Naturgeschichte' for 1860 contains an ornithological paper by Dr. R. A. Philippi, the well-known Professor of Zoology and Botany at Santiago, in which he describes as new, two Ducks—*Anas iopareia* (scribe *ioparia*), allied to *A. specularis* and *A. oxyura*, and *Erismatura vittata*, and gives some remarks upon the synonymy of a species of *Chrysomitris* found in Chili.

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[*] Nec *Rhynochetos*; the derivation being, *ῥὶν nasus*, and *ὀχετὸς canalis*.

[†] See 'Ibis,' vol. i. p. 113.

[‡] Confer Wallace in 'Ibis,' 1860, p. 198.

Dr. Lindermayer's 'Vögel Griechenlands*' is a useful summary of the observations of this well-known naturalist upon the birds of the country in which he has so long resided, separately reprinted from the third Yearly Report of the Natural-History Union of Passau. It contains notices of 345 species of birds considered as belonging to the fauna of Greece. *Falco arcadius*, described originally in the 'Isis' of 1843 (a name which has met with much bad treatment from naturalists), Dr. Lindermayer still maintains to be that of a good species, quite distinct from *F. eleonoræ* and *F. concolor*, the latter bird having been once only obtained by him in Greece, though Temminck says it is 'common' there. No fresh examples of this rare Falcon have been obtained since it was first described; but the younger Brehm is stated to have obtained specimens of it in Kordofan, so that it is, perhaps, a scarce occasional migrant to Europe. Dr. Lindermayer says nothing of *Corvus monedula*, var. *collaris*, which is, to say the least of it, a very noticeable climatal form of *C. monedula*, but considers *Motacilla melanocephala* (which is a regular summer-visitant) as a good species. *Larus cachinnans* of Pallas ("a very common resident in Greece, breeding in numbers in the lagunes and desert islets") is probably the bird referred to, in a previous Number of this Journal†, as a variety of *Larus argentatus*.

We are indebted to the courtesy of Herr Ferdinand Heine for an early copy of the first portion of the third part of the list of his extensive ornithological collection, called 'Museum Heineanum‡.' It contains an enumeration of the Humming-birds (*Trochilidæ*) in the Heinean collection, numbering 183 species. Notes are likewise given concerning the other known species of each genus, among which we observe a fine new form from Veragua, designated *Panterpe insignis*, of which we have had the pleasure of inspecting the types in the Berlin Museum. The careful elaboration of synonyms will render this volume most valuable for reference, and useful to the student of this attractive but difficult family of birds.

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* Die Vögel Griechenlands. Ein Beitrag zur Fauna dieses Landes von Dr. Ritter A. Lindermayer in Athen. Passau, 1860, 1 vol. 8vo, 188 pp.

† 'Ibis,' 1860, p. 355.

‡ Museum Heineanum. Verzeichniss der ornithologischen Sammlung des Oberamtmanns Ferdinand Heine, von Dr. Jean Cabanis und Ferdinand Heine, Stud. Phil., iii. Theil, die Schrillvögel enthaltend. Halberstadt, 1860.

We have seen Dr. A. de Philippi's 'Reise durch die Andenwüste Atacama' (Halle, 1860, 4to), and will give a further notice of it in our next Number.

The Royal Zoological Society of Amsterdam have presented us with a copy of their magnificent work* upon the Touracos (*Musophagidæ*) of Africa—a monograph carefully elaborated by MM. Schlegel and Westerman, and which leaves little wanting, either in the way of illustration or description, so far as our knowledge of this beautiful family of birds has been at present advanced. The recognized species of the group are 17 in number, which are divisible into two very distinct sections, according to the form and covering of the nostrils. Every species is splendidly and accurately figured of the size of life. The letter-press is in the national language of Holland, which, however much we may lament, we cannot reasonably complain of in a national work like the present; but a Latin synopsis is also given, in which the species are distinguished by full and accurate diagnoses. Altogether we must express our highest approbation of this work, which we consider as the very Prince of Monographs.

We have received, through Professor Sundeval's kindness, the 6th, 7th, and 8th numbers of 'Svenska Foglarna,' a well-executed popular work on the Birds of Sweden, with the text written by this talented naturalist. We have already noticed the previous parts of this book ('Ibis' 1859, p. 324).

The first part of the Bulletin of the Imperial Society of Naturalists of Moscow for the present year contains a general article by

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* Die Toerako's afgebeeld en beschreven door H. Schlegel onder medewerking van G. F. Westerman. Ofgedragen aan Z. M. den Koning. Uitgegeven door het Koninklijk Zoölogisch Genootschap Natura Artis Magistra. Amsterdam, 1860, 1 vol. fol., 26 pp., 17 col. plates.

Arthur von Nordmann upon the Birds of Finland and Lapland*. During the absence of this young naturalist upon one of the Russian expeditions to the Amoor, the list of birds has been revised and edited, with some additional remarks, by his father, Alexander von Nordmann. The whole forms a concise review of the ornithology of this country, and an acceptable contribution to our knowledge of geographical distribution. The previous authorities consulted by the writers are the following. We repeat the list, as several of them are not well known in this country, and give also a translation of H. von Nordmann's accompanying remarks on some of them :—

1. *P. U. Sadelin.* Fauna Finnica. Aboæ, 1810 et 1819. [An antiquated list, and hardly of any value.]

2. *A. Th. v. Middendorf.* Bericht über die ornithologischen Ergebnisse einer Reise in Lappland, 1840. In the 11th vol. of 'Beiträgen zur Kenntniss des russischen Reiches.'

3. *T. Blasius.* Reise im Europäischen Russland. Braunschweig, 1844.

4. *M. v. Wright.* Helsingfors Traktens Foglar. In the 'Notizen der Societas pro Fauna et Flora Fennica.' 1848.

5. *W. Lilljeborg.* Bericht über eine Reise in Russland und Norwegen (in Swedish). Kon. Svensk. Vetensk. Handl. 1850. [Very good.]

6. *W. Lilljeborg.* Beitrag zur Ornithologie des nördlichen Russland und Norwegen. In 'Naumannia,' 1852, pt. ii.

7. *L. Schrader.* Beobachtungen über die Vögel Lapplands, mitgetheilt von Pastor W. Pässler. Cabanis' Journal f. Orn. 1853, pts. 4 & 5. [No other ornithologist has passed so long a time (eight years) in Lapland as Schrader; his contributions are of more importance than all that has been previously written upon the Avifauna of Lapland.]

8. *J. v. Wright.* Kuopio Traktens Fogelfauna.

9. *M. v. Wright.* Anteckningar un der en resa fran Kuopio till Avasaka 1856, &c. In 'Bidrag till Finlands Naturkännedom' for 1857, part ii.

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* Uebersicht der bis jetzt in Finnland und Lappland vorgekommenen Vögelarten, von Arthur von Nordmann. Durchgesehen und mitgetheilt von Alexander von Nordmann. Bull. Acad. Imp. Nat. Moscou, 1860, p. 1.

10. *S. Nilsson.* Skandinavisk Fauna, Foglarna, 1858.

11. *M. v. Wright.* Finlands Foglar. Helsingfors, 1859 [Just published].

Carpodacus erythrinus, the younger von Nordmann tells us, is now common in Southern Finland, although, as his father states, that was not the case thirty years ago. It nests every year in the Botanical Gardens (at Helsingfors), in the tops of the Maple and the *Carangana sibirica.* The nest consists of thin twigs loosely put together. The eggs are white, with a few blackish-red spots at the large end. The bird arrives in Helsingfors in the middle of May, and in 1857 had fledged young on the 25th of June. After having once heard the loud flute-like voice of this bird, there will be no difficulty in recognizing it a second time, as it conceals itself in the tree-tops. It has a finch-like call-cry resembling that of *Fringilla chloris.*

The *Anser albifrons,* said (p. 43) to breed in Lapland, must be intended for *Anser erythropus* sive *minutus**.

Of the second part of the Report of the Russian exploring expedition in Amoorland, containing the Birds†, we have lately seen copies, and we hope to be able to give a notice of this important work at some length in our next Number.

4. AMERICAN PUBLICATIONS.

M. Le Moine's little book‡ "on the Ornithology of Canada" appears to have been written with the laudable wish to stimulate his fellow-countrymen to show more energy in the cause of Natural History, in which, as in material prosperity, their republican neighbours seem to have left them far behind.

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* See 'Ibis,' 1860, p. 404.

† Reisen und Forschungen im Amurlande in den Jahren 1851–56, im Auftrage der Kaiserl. Academie der Wissenschaften zu St. Petersburg; ausgeführt und in Verbindung mit mehreren Gelehrten herausgegeben von Dr. Leopold von Schrenck. Band i. Zweite Lieferung, Vögel des Amurlandes. Mit 7 colorirten Tafeln. St. Petersburg, 1860.

‡ Ornithologie du Canada. Quelques groupes d'après la nomenclature du Smithsonian Institution de Washington. Par J. M. Lemoine. Quebec, 1860, 1 part, 96 pp., 12mo.

X.—*Letters, Extracts from Correspondence, Announcements, &c.*

We have received the following letters:—

To the Editor of 'The Ibis.'

26 Charlotte Street, Bedford Square, W.C.

Sir,—In reference to the remark in 'The Ibis,' vol. i. p. 404, "we are pretty sure that if the *Chiff-chaff* occurs at all in the Scandinavian peninsula, it is only in the extreme south," I beg to send you a copy of a note I made respecting this species on my return to London, after visiting Norway in the summer of 1856:—

"The Chiff-chaff (*Phylloscopus rufus*) was not so abundant in Norway as the common Willow-Wren (*P. trochilus*), neither does it frequent the higher lands, at least I did not either hear or see it there. I did, however, hear it sing; and my companion, Mr. Wolf, shot one near the celebrated waterfalls at Trondheim. The legs of this specimen were dark olive-brown, the nails and toes the same; the soles and back of the tarsi yellowish; bill olive-brown; under mandible and gonys yellowish; eye nearly black." Yours, &c., John Gould.

[*Obs.* We are much indebted to Mr. Gould for thus informing us with respect to the range of the Chiff-chaff in Norway, which certainly seems to be more northerly than we had supposed; but our remarks, as regards Herr Schrader's assertion, are but little affected thereby, as Trondheim is still within the limits of the southern portion of the peninsula.—'The Ibis' *Reviewer.*]

To the Editor of 'The Ibis.'

October 24, 1860.

Sir,—I beg leave to forward to you such particulars as I have been able to obtain regarding a curious locality chosen for breeding by a pair of Golden Eagles (*Aquila chrysaëtos*) in Perthshire during the past season. The nest was built in a large Scotch-fir tree—one of a wood on the southern bank of Glen Lyon, on the other side of the river, but not more than 350 yards distance from Meggernie Castle, the *present* residence of Ronald Steuart Menzies of Culdares. Four eggs were laid, by the hen bird, and two of them hatched. A bird which I saw last month was one of the produce: I should judge it, by its size, to have been a female. I do not remember any parallel instance of such disregard of the proximity of human habitations by these birds being noted in any work on ornithology. The nest was of the Eagles' own construction, and not a deserted nest of another bird, as I should rather have expected.

Yours, &c., J. W. P. Orde.

To the Editor of 'The Ibis.'

5 Peel Terrace, Brighton, Nov. 10, 1860.

Sir,—I send you one or two ornithological notes for the past year, which has been most disastrous for birds. In vain we have looked for the countless streams which usually pass down to the sea at the period of the autumn migration.

It is the same with the Sussex bird-catchers: their success is unusually small. In the spring, the rain prevented many birds from breeding. I witnessed the efforts of a pair of *Picus viridis* to do so. Once they were driven out by Starlings; twice, after cutting deep holes with great labour, the wet obtained an entrance and filled the chamber; at last they gave up in despair. The like fate was that of many other birds.

In the Isle of Wight I saw a young Cuckoo (*Cuculus canorus*) killed, September 18th; it had not obtained all its tail-feathers.

Near Southampton a fine cock *Pastor roseus* was obtained this summer. Some Starlings were feeding in a cherry-tree, and a man fired into the flock to protect his fruit, when he picked up this bird among the dead.

A *Sylvia tithys* was caught alive at the back of my house on October 26th, and two more have been since shot on the sea-shore; in fact, specimens are obtained every year here.

The Serine Finch (*Fringilla serinus*?) has been taken near Brighton; and I am quite convinced that this bird ought to be, and soon will be, included in our list of British birds, as I am told of three other instances of *F. serinus* having been caught by Brighton men, and cast aside from ignorance of its value,—it having been hitherto supposed to be a mule of some kind, escaped from confinement.

If attention be directed to the Serine Finch, others will probably be observed and recorded.

Hardly a *Fringilla carduelis* has been procured this autumn; and several of the bird-catchers here have expressed to me their strong belief, founded on long practical experience, that within a few years the Goldfinch will become, in this part of England, a scarce bird. Multitudes of hens have been netted and slain annually, in a ruthless manner; and consequently the numbers have been diminished to a very great degree.

Yours, &c., George Dawson Rowley.

To the Editor of 'The Ibis.'

Elveden, December 1st, 1860.

Sir,—I have received a letter from Professor Reinhardt, dated Oct. 9th, 1860, in which he refers to a communication of mine to 'The Ibis' for 1860 (p. 307), and I beg leave to extract from it what he says on the subject of a species of Quail found in the island of St. Thomas:—

"From the last Number of 'The Ibis' I see that you are informed of the occurrence of an *Ortyx* (*sonninii*) in St. Thomas, and that you are inclined to suppose it to be imported from the mainland of South America, in the same way that *Ortyx virginianus* has been introduced from the United States. It is certainly a curious fact that the former bird is confined to St. Thomas, and not to be found in St. Croix; but, on the other hand, the St. Thomas bird does not seem quite to agree with the nearest-allied *Ortyx* from the Spanish Main, the bill being decidedly stronger, and the throat brownish red, spotted along the middle with black—*not uniform red.* So far I find no difficulty, but much in every attempt to refer the West Indian bird to any of the well-known species. As far as I can judge at this moment, I am inclined to suppose:—

"(1.) That the true *Ortyx sonninii*, Temm. Pl. Col. 75, is not the *Ortyx sonninii* of Gould, which differs from the bird figured by Temminck in having the red throat separated from the breast by a black- and white-spotted band, of which there is no trace in Temminck's figure.

"(2.) That the *Ortyx sonninii*, Gould (not Temminck), is also an inhabitant of the Spanish Main, whence I have a specimen.

"(3.) That the *Ortyx* from the Virgin Islands may very likely prove to be *O. affinis* of Vigors, a species not admitted by Gould.

"The species then would stand thus:—

"1. *Ortyx sonninii*, Temm.; no band of spots separating the throat from the breast.

"2. *Ortyx* ——? (*sonninii*, Gould); a small collar of spots between the throat and breast.

"3. *Ortyx affinis*, Vigors; a collar as in the preceding species, and some black- and white-spotted feathers along the middle of the throat.

"The true *Ortyx sonninii*, Temm., I never saw; of the Venezuelan bird (Gould's *O. sonninii*) I possess one example only; but of the West Indian bird I have compared several specimens. My opinion on the subject is not at all fixed; but if Temminck's figure is only tolerably correct, I cannot understand how it can be the same bird as that represented by Gould."

Unfortunately Mr. Riise has returned to St. Thomas, taking with him the only example which he submitted to my inspection; the matter must therefore remain for the present undecided; but I have thought it due to Professor Reinhardt to give his remarks publicity, hoping that other ornithologists may assist in determining the point. The description of Mr. Vigors's *O. affinis* appears to be in the Proc. Com. Sc. and Corr. Z. S. 1830, p. 3. The locality of this supposed species is not given by Mr. Vigors.

I may add that by accident I omitted to mention *Hæmatopus palliatus* as included in Mr. Riise's collection, to which my former letter referred.

Yours, &c., ALFRED NEWTON.

Since the publication of our last Number, another small collection of birds has been sent home from the Mauritius by Mr. Edward Newton. In addition to the species already enumerated ('Ibis,' ii. p. 201), it contains examples of the following:—

Palæornis eques. Peculiar to the island.

Acridotheres tristis. Introduced from India.

Munia punctularia (?). Introduced from Malacca (?).

M. oryzivora. Introduced from Java.

Phedina borbonica. Peculiar to the island.

Geopelia striata. Introduced from the East Indies.

Coturnix argoonda. Introduced from India.

Synœcus sinensis. Introduced from Asia.

Gallinula —— (?). Probably aboriginal, and possibly peculiar.

Porphyrio madagascariensis. Probably aboriginal.

Phaëton flavirostris. Widely distributed over the Tropical seas.

Puffinus assimilis. The southern representative of *P. obscurus*, and perhaps hardly distinct from it.

The *Gallinula*, of which one specimen only is included in the collection, is regarded by Mr. E. Newton as distinct from the common *G. chloropus*, to which species Dr. Hartlaub (Journ. f. Ornith. 1860, p. 173) refers the Water-hen found in Madagascar, Bourbon, and Mauritius, and to which species it undoubtedly has a very great general resemblance. The chief points of difference are in the colour of the legs and of the under tail-coverts, which in Mr. E. Newton's bird are *bright yellow* and *buff* respectively: but, in the absence of more specimens, it would not be desirable at present to characterize Mr. E. Newton's example as of a new species; though, if it be, as he thinks, not identical with *G. chloropus*, it will probably prove to be so. In a later communication, that gentleman mentions that the call-note of the Mauritian bird differs decidedly from that of the European; and it will be remembered that the same peculiarity has been noticed ('Ibis,' i. p. 260) with respect to the American species (*G. galeata*).

The following are extracts from Mr. E. Newton's letters :—

"Sept. 2, 1860.

I hope, about the middle of the month, to get down to Savanne, where I have no doubt I shall be able to get a good many more birds, and very likely some fresh species of land-birds, as I fancy the country there is quite different from anything about here [Port Louis]. S—— is really off to Madagascar as soon as he can get a ship to take him. I wish to goodness I could go with him ! and he is just the fellow to suit me. The trip, however, will be rather expensive—£150 for a couple of months, which is about the time he means to be away, *i. e.* if he is allowed to go up to the capital. He has promised to collect;

and I think he will be as good as his word; but he does not know much about it. I have furnished him with the necessary *matériel,* and I hope he will be able to hire a man who can skin, and whose expenses I have agreed to pay. It would have been useless to have taken down a negro from this place, as they might probably keep him, which would be a bore. Altogether it is not without risk; and it is quite on the cards that he (S——) may not be allowed to go up the country, or if he is, that he may be detained some time: the Queen is very anxious to have some white blood introduced among her subjects; and Englishmen are liable to be kept for that purpose. There is a brig-of-war just starting to visit some of the 'Dependencies' of this place. There is a man going with her whom I hope to induce to make some skins; but it is very doubtful if he will. He can skin very well, but does it more for the sake of what is commonly called 'keeping curiosities' than anything else: it is a great pity one cannot get people to think as oneself does on this subject. I have heard nothing from the Seychelles, but I still expect to get a few things thence."

"Oct. 22, 1860.

"S—— has returned from Madagascar: he was not able to get to the capital. They wrote to him from there that it was the same as Tamatave, and, therefore, if he had seen Tamatave he had seen the capital. The Queen also was the same as the governor of Tamatave; if therefore he had seen the governor of Tamatave, he had seen the Queen of Madagascar. He was three weeks at Tamatave, but was never allowed to go further than ten miles into the interior: the country was most rich in everything, and he was delighted with it. He only brought back two birds and the head of another: one, a *Coua* or *Centrŏpus*: the second, a *Porphyrio*—the same as the skin I sent from here: the head, I expect, is that of *Scopus umbretta*; and S—— tells me it is tolerably common, and goes by the name of 'Faisan.' He found a man at Tamatave, a half-Hova, who was educated in France, and who is willing to undertake a large expedition into the interior in search of specimens of natural history. His pretensions, however, are large, as he declares that he should require $2000 to do it well, and this to be paid beforehand.

His time of collecting would extend from November to March or April. This is, of course, out of the question at present; but in a few days I am going to send him $100, to see what he can get me for that: I do not expect much; but, 'nothing venture, nothing have.'"

"Nov. 2, 1860.

"I am not despairing yet about Dodo's bones; I saw some that were found in a cavern last week. The finder, Dr. Ayres, assures me that they are those of the Rodriguez bird, and not the Mauritian Dodo: he intends to give them to the British Museum. We are to have a regular search in the cavern the first opportunity. What is curious, is that with them he found Deers' teeth, as well as Reptiles', and some other Bird's bones, which latter were so brittle he could not preserve them."

In our next Number we hope to be able to give some notes of Mr. E. Newton's, relating to his short sojourn at Savanne.

Mr. Wallace's collections from Amboyna and Ceram have arrived in England. The greatest novelty in them is a beautiful new *Basilornis* with an erect crest, making the second of the genus. Other species of interest are *Lorius domicella, Eos rubra, Trichophorus flavicaudus*, and *Tanysiptera dea* (?).

Mr. Wallace's latest letters, dated from Ceram, in June last, speak of the probability of his return to England being not long delayed. He had been much disappointed with the results of an expedition to the northern part of the island, and was then intending to go to Mysol, which was expected to prove a good locality.

Mr. Edward Hearle Rodd informs us that a good male specimen of the Spotted Eagle (*Aquila nævia*), with the elliptical spots on the wing-coverts, and scapularies well marked, was shot on the 4th of December, in the parish of Northhill in the eastern part of Cornwall. The occurrence is also mentioned in the 'Times' of December 12th. This bird has only once, we believe, occurred previously in the British Islands, namely, in Ireland, in 1845, as recorded in the first Supplement to Yarrell's British Birds (p. 11) and other publications.

An article 'On Norfolk Island,' by Dr. C. T. Downing (in the lately published second part of the third volume of the Papers and Proceedings of the Royal Society of Tasmania), contains the following paragraphs relating to the birds now found there. Among them may be recognized some of the species indicated by Herr von Pelzeln in his paper on the ornithology of this island, of which we gave a *résumé* in our last Number ('Ibis,' 1860, p. 421). But there is little doubt that Herr von Pelzeln's list does not embrace all the species of birds found in the island; for Dr. Downing mentions three kinds of Parrots as occurring there, and Herr von Pelzeln only gives one—the *Nestor*. It would be very desirable that a complete investigation should be made of the Faunas of this and similar isolated spots of the world's surface, and their peculiar species registered, before the advancing tide of human civilization shall have completely extirpated them, as has been already the case in some well-known instances.

"A greater number and variety of the feathered tribes inhabit this lonely group, or visit it during the breeding-season. The Guinea-fowl (?) was observed by the early navigators, but has now become quite extinct. There are three kinds of Parrot on Norfolk Island:—the small crimson and blue Lory—*Psittacus pennantii*; one green with a red ring round the base of the beak; and another. These birds are easily entrapped. A dingy-plumaged Kingfisher, bold and fierce, is very common, and passes under the name of 'The Norfolker.' The domestic Pigeon has been naturalized, and breeds abundantly among the cliffs. Its numbers would be troublesome but for the ravages of the wild Cats. A large and handsome species of Pigeon, called the 'Wood Queest,' with bronzed head and breast, is met with occasionally round the base of Mount Pitt, but has hitherto resisted all efforts at domestication. In addition, there is a variety of the Blackbird (so called) or Robin, with a white head and scarlet breast, Guava birds, White-eyes, and Fantails. These last-named small birds are met with in the gullies, and are so tame as to perch upon the finger or a stick, if held towards them. One specimen of the Avocet, the *Recurvirostra rubricollis*, was shot upon the island about a year and a half since, and sent up to this Society by Dr. Hueston, as well as a male and female Spoonbill, the head and feet of which are now laid upon the table."

"Ocean birds in great abundance surround the shore. Formerly, their head-quarters were at Mount Pitt; but since Norfolk Island has been inhabited they have removed to the smaller isles. Nepean swarms with Gannets and Mutton Birds, while Boatswain or Tropic-birds, and Sea-Swallows, inhabit the rocks to the north."

The typical and only known specimen, in European collections of the Vulturine Guinea-fowl (*Numida vulturina*, Hardwicke; Gould, Icon. Av., pl. 8) has lately been purchased from the United Service Institution by the Trustees of the British Museum. With reference to the true locality of this bird (commonly said to be *West* Africa), we are informed by Mr. E. Layard that he obtained living examples of it at Bojana-bay, on the north-west side of Madagascar, where it is the domesticated species. Hartlaub however, we may remark, gives *Numida cristata* as the *only* known species in Madagascar*. The latter, Mr. Layard informs us, he obtained alive at Zanzibar, 'where it is *the* species.'

We have the pleasure of announcing that Mr. Edgar N. Layard, now resident in Cape Town as Curator of the South-African Museum, is preparing for communication to this Journal a series of articles upon the Birds of Africa south of the Tropic of Capricorn. Mr. Layard hopes to be able to give a short diagnosis of each species, with full details as to localities, range, nidification, &c. We propose to keep the different articles in type, and, on the completion of the series, to issue the whole (together with corrections and additions) in one volume, which may in this shape, we hope, form a useful Synopsis of South-African Ornithology. Those who desire to obtain copies of the Synopsis, or to assist Mr. Layard in his undertaking, are requested kindly to communicate with him (at the Museum, Cape Town), or with the Editor of 'The Ibis.'

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* Syst. Orn. W. Afr., p. 200, and "Syst. Ueb. Vög. Madagasc." in Cab. Journ. 1860, p. 163.

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XI.—*On new or little-known Birds of North-Eastern Africa.* By Hofrath THEODOR VON HEUGLIN. (Part III. The Barbets, *Capitonidæ**.)

[Continued from p. 76.]

(Plate V.)

THE range of the birds belonging to the family of Barbets (*Capitonidæ*) in North-Eastern Africa is confined to the tropical provinces which are subject to a periodical rainy season. Northwards of the boundary of the tropical rains not a single species is found, though the genera *Pogonorhynchus, Barbatula,* and *Trachyphonus* are abundant in the low countries of the White and Blue Nile. The species which I have observed, generally prefer the plains and low grounds to the mountains, and especially frequent woodland districts. In the lower 'Deka'* appear *P. saltii*, *P. vieillotii*, and *P. undatus*. I have also myself observed a species of *Barbatula* in the Dallager valley in Abyssinia, at an elevation of from 5000 to 6000 feet above the level of the sea; its appearance there, however, is very unusual.

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* The full synonymy of the African Barbets, and a list of all the known species, are given by M. Jules Verreaux, in an article in the Zoological Society's 'Proceedings' for 1859 (p. 393). Dr. Hartlaub informs us, however, that the *Megalæma leucotis* of Sundeval, from S. Africa, is not the same as *Laimodon unidentatus,* as is there stated, but a good and distinct species, and that the Southern *Megalaima bilineata,* Sundeval, although closely allied to, is not identical with the Western *Barbatula leucolæma,* Verreaux. Dr. Hartlaub acknowledges *Trachyphonus squamiceps,* Heuglin, as here described, to be quite distinct from *T. margaritatus.* It also appears that M. Verreaux's *Laimodon albiventris,* of which a description and good figure are given in the paper above referred to, has been previously named by Dr. Peters (Bericht Akad. Berlin, 1854, p. 134) *Pogonias melanopterus,* and is from Mozambique, and not from Western Africa.—ED.

With the exception of the *Trachyphoni*, the *Capitonidæ* are not shy birds, though quiet and solitary, and always keeping to the high trees and bushes. The *Trachyphoni* are frequently seen in the plains, and although also shy, are of a much more lively and wandering nature than the *Pogonorhynchi* and *Barbatulæ*. The note of the *Trachyphoni* is loud and very melodious; they run (though in a different manner from Woodpeckers) up and down the trunks of trees, feeding upon insects, berries, and fruits, as they hop from branch to branch. Their flight is short, but rapid; their course consisting of a series of numerous undulations. I never saw any of the species of this group on the ground. I am not acquainted with the mode of propagation of these birds, except that *Trachyphonus margaritatus* builds in holes of trees, and lays white eggs, usually from four to six in number. In the months of October and November I have often seen half-fledged young ones of this species clustering together, in the peculiar way that may be observed in some of the European genera (*Parus*, for instance), and sitting on the smooth side of the small branches, chirping as they await their parents. With raw flesh and hard and soft-boiled eggs I have kept some of them a long time in confinement.

The *Capitonidæ* of N.E. Africa are not exactly migratory, though they appear at the time when the Sycamores (*Ficus sycomorus*) are ripe in countries where they are not generally met with.

I now give an account of the species known to me, and add descriptions and figures of some new ones.

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* The '*Deka*' in Abyssinia is the term which includes the mountainous country from an elevation of 6000 feet upwards to the Snow-region. The vegetation of the '*Deka*' is distinguished from that of the low-lying '*Kolla*' by its evergreen foliage. The *Kolla* is the region of Bamboos and different sorts of forest-trees, whose leaves fall in the early spring, and are replaced at the beginning of the rainy season.

Genus POGONORHYNCHUS *, Van der Hoeven.

1. P. ROLLETI. *Pogonias rolleti,* De Filippi, Rev. Zool. 1853, p. 290.

Not rare on the banks of the Bahr el Abiad, in 10° N.L.; found on high trees near the rivers, and in the wooded districts of the Steppes to the south. This species, which I have known since 1851, was accidentally omitted in my "Systematic List of the Birds of N.E. Africa†."

2. P. BIDENTATUS (Shaw).

According to Dr. Rüppell, common in Schoa. Rare on the Upper Bahr el Abiad.

3. P. LEUCOCEPHALUS. *Pogonias leucocephalus,* De Filippi, Rev. Zool. 1855, p. 291.

Rather common on the banks of the Bahr el Abiad, southwards from the confluence of the Sobat and the Bahr el Ghazal.

4. P. SALTII (Stanley).

Not rare in Abyssinia, except in the coast-region and high mountains, and also found in Sennaar and Kordofan, and along the northern course of the Bahr el Abiad.

5. P. VIEILLOTI (Leach).

The most common species in Kordofan, Abyssinia, and Sennaar. The most northern limit of its range is between 14° and 15° north latitude.

6. P. UNDATUS (Rüpp.).

Not very rare in Abyssinia and Sennaar.

7. P. BIFRENATUS (Hempr. & Ehrenb.). *Pogonias melanocephalus,* Rüpp.

Dr. Rüppell, in his 'Systematische Uebersicht der Vögel Nord-Ost-Afrikas,' declares this little species to be frequent in Sennaar and Kordofan; but this assertion is certainly not correct. The only country in N.E. Africa where I have found this bird at all numerous is Eastern Abyssinia, especially in the valleys of Morat and Moreb and the Habab territory. Nearly related, but much larger, is Sundeval's *Megalæma leucotis,* from Lower Caffraria (Öfvers. 1850, p. 109).

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* Handb. d. Zool. (1833) ii. p. 446.

† Sitzungsb. d. Kais. Acad. Wien, vol. xix. p. 255.

8. P. DIADEMATUS, Heuglin. *Pogonias diadematus,* Heugl. Syst. Uebers. p. 47. no. 479.

Only found in the wide Steppes of the Kitsch-Negroes, between 7° and 8° N.L. on the western bank of the Bahr el Abiad. It is common on high trees, especially on the colossal Sycamores. This species resembles the nearly-related, but larger, and also more or less highly-coloured *P. unidentatus* (Licht.) from Kafferland, and *P. duchallui,* Cass. (*Barbatula formosa,* Verr.), from W. Africa.

Genus BARBATULA, Lesson.

1. B. PUSILLA, Bp. *Bucco barbatula,* Temm.

In a collection of birds made on the Blue Nile, which I presented to the Royal Natural History Cabinet at Stuttgard, I first found an apparent male of this species. It substantially agrees with the diagnosis given by Hartlaub (Syst. Orn. W. Afrik. p. 173), though slightly differing in dimensions, which in my examples are as follows:—Long. tota circ. 4·0, rostri a fronte 0·48, tarsi 0·6, alæ 2·0, caudæ 1·3 poll. et lin. Gall.

2. B. CHRYSOCOMA (Temm.). *Bucco chrysocomus,* Temm. Pl. Col. 536. fig. 2.

I found specimens of this humble little bird concealed in thick foliage along the streams of Central and West Abyssinia, as well as on the Bahr el Abiad, and also more rarely on the main stream of the Nile between Khartoum and Berber. It may be abundant, but from its habits is very difficult to find.

Genus TRACHYPHONUS, Ranzani.

1. T. MARGARITATUS (Rüpp.). *Bucco margaritatus,* Rüpp. Atlas, t. 20.

Common in the Bajuda-Steppes along the banks of the Nile, south of Berber (17° N.L.), in Kordofan, Sennaar, Abyssinia, Taka, and in the Abyssinian Avail and Somali coast-lands. Apparently confined to E. Africa, but very widely diffused. The male is somewhat larger than the female. Iris violet.

2. T. squamiceps, Heugl. *T. squamiceps,* Heugl. Syst. Uebers. d. Vög. N.-O. Afrika, no. 482. p. 47.

Rare in the Steppes of the Kitsch-Negroes, on the western shore of the Bahr el Abiad. It may be the same as *T. margaritatus,* but I have never met with this species in Kordofan.

I now add descriptions of the newly-discovered species, which are represented in the accompanying Plate.

1. Pogonorhynchus rolleti. (Plate V. fig. 1.)

Coracino-niger, tergi macula, et hypochondriis pure albis, his ex parte nigro-striolatis: remigibus fuliginoso-nigricantibus, subtus, interne et basin versus pallidioribus, externe coracino-limbatis: subalaribus cinereis, flexuram versus coracinis: abdomine medio et crisso intense cinnabarinis: orbitis nudis, violaceis: rostro valido, pallide virescente, basi cærulescente, maxilla bidentata, simpliciter sulcata, mandibula non plicata: vibrissis rigidiusculis nigris: iride brunnea: pedibus plumbeo-fuscis: long. tota 10·3, rostri a fronte 1·4, ab angulo oris 1·5, alæ 4·15, caudæ 3·15 poll. et lin. Gall.

This species is distinguishable from *P. dubius* (of Senegambia) by important characters, such as the absence of red on the head, and a different formation of the bill. The whole bird is nearly entirely of a shining blue-black, with the exception of a large white spot on the back, and the sides of the belly, which show a few fine black markings, and some flame-coloured streaks towards the breast. The middle and lower part of the belly is of a lively cinnabar-red on a white ground; the wings are smoky grey on the inner web, the feathers getting gradually lighter towards the base. The under wing-coverts are likewise smoky grey, becoming towards the wing-margins bluish black. The upper beak has on each side a single deep furrow, within which the bristles are placed: the latter are about half the length of the beak; the colour of the beak is light greenish yellow, bluish towards the base. The feet and nails are greyish brown.

The sexes are coloured alike, but the female is a trifle smaller in dimensions. This species is rather numerous on the Upper White Nile, particularly on the Sycamore trees, the fruit of which supplies a favourite food for all the species of *Capitonidæ.*

2. Pogonorhynchus leucocephalus. (Plate V. fig. 2.)

Capite, pectore, uropygio, et tectricibus caudæ superioribus et inferioribus albis: interscapulio, alis, ventre et remigibus alarum macula apicali triangulari alba notatis: scapularibus et ventre longitudinaliter albo-striolatis, interscapulio fere immaculato: remigibus interne et basin versus distincte albido-marginatis: subalaribus cinereo-umbrinis, albido flammulatis: rostro vibrissis rigidiusculis albis circumdato: orbitis nudis, griseo-violaceis: iride brunnea: rostro et pedibus plumbeo-nigricantibus: long. tota 6·6, rostri a fronte 0·10, ab ang. oris 0·12, alæ 3·4, caudæ 2·2, tarsi 0·9 poll. et lin. Gall.

In this beautifully coloured and aberrant species, the head, throat, breast, belly, under and upper tail-coverts, as well as the chin, are white, with a slight tinge of yellow; a band of bright brimstone-yellow passes from the forehead over the eye, which, however, the bird quickly loses after death. The rest of the bird is shining umber-brown, the wing-coverts being pointed with well-marked triangular white spots, and the scapularies and belly streaked with white lines along the shafts. The wing-feathers are greyish brown, with a white edging on the underside near their bases; the tail-feathers are rather darker than the wings; the under wing-coverts are brownish grey, partly streaked with white. The irides are umber-brown, the naked space round the eye violet-grey. The beak and feet are blue-black.

P. leucocephalus is as common as the preceding species, and is found in the same districts, particularly on the high trees with thick foliage. In its stomach we found berries, insects, and figs. With the fruit of the latter the face often becomes stained yellow.

3. Pogonorhynchus diadematus. (Plate V. fig. 3.)

Tergæo et regione parotica nigris; vertice et fronte nitide scarlatinis; loris nigris; superciliis, per colli latera decurrentibus, antice nitide sulphureis, et nucham versus albis: nucha media et scapularibus externe albo limbatis: auchenio, interscapulio et tectricibus alarum minoribus maculis longitudinalibus flavissimis; tectricibus alarum majoribus extus flavescente limbatis: uropygio et tectricibus caudæ superioribus fere totis vivide flavis: remigibus et rectricibus fuscis flavido-marginatis, his interne, basin versus, albo-limbatis: gastræo albido, medio flavescente tincto: subalaribus albidis: iride umbrina: rostro et pedibus plumbeo-nigricantibus: long. tota 4·10, rostri a fronte 0·7, alæ 2·9, caudæ 1·9, tarsi 0·7·3 poll. et lin. Gall.

This variegated bird is the smallest of the species of *Pogonorhynchus* in N.E. Africa. The forehead and top of the head are bright scarlet, the face round the ears, neck, and wing-coverts shining black. A band over the eye and along the head brimstone-yellow in front and pure white behind. The middle of the neck is spotted with white. The rest of the upper surface is not of so bright a black as the neck. The scapularies generally on the outside are broadly bordered with white; the back of the neck and upper wing-coverts are spotted with yellow; the wings and tail are bordered on the outside with pale yellow; the lower back and upper tail-coverts are deeply tinged with greenish yellow, so that the dark ground-colour is hardly perceptible. The wing-feathers below are edged with white, more broadly towards their bases: the lower side is brighter than the upper, as is likewise the case with the tail; the under surface is whitish, tinged with yellow about the breast and belly. In young birds the under tail-coverts along the shafts are shaded with greyish black.

While both the preceding species are spread from 10° N.L. southwards along the explored course of the White Nile, *P. diadematus* appears to have a more westerly range. The numerous examples that have passed through our hands were all collected westward of the Bahr el Abiad in the districts of Gog, Djak, Djar, &c., between 7° and 8° N.L., and on the river Bahr el Ghazal. The food of this species consists of insects, berries, and fruits.

P. diadematus has, like *P. bifrenatus,* a loud and lively note, deep and melodious.

4. TRACHYPHONUS SQUAMICEPS. (Plate V. fig. 4.)

T. margaritato affinis, sed differt, statura multo minore, facie et vertice flavo-rufescentibus; tectricibus caudæ superioribus vivide flavis; capite (mento excepto) collo et pectore chalybæo guttatis: nucha albida, nigricante variegata: iride brunnea: rostro cinerascente-carneo: pedibus plumbeis.

This little species much resembles in size, structure, and colouring *Trachyphonus margàritatus*, but is distinguishable by its plumage, particularly of the head, in which the elastic horn-like structure of the feathers is still more developed. The face is fiery yellow, and, with the exception of the chin, on the point of each feather is a shining steel-black metallic spot. The roots of the entire *pileus* and the centre of the throat are of the same colour; the neck is whitish, having in general before the point of each feather a broad black speck. The scapularies and wings are speckled with white on a smoky-brown ground; but these specks are not quite at the edge of the feathers, as in *T. margaritatus*; they exist on the wings and greater wing-coverts, but are never found on the inner barbs; the wings are spotted with bright yellow; the back and tail-coverts are greyish green, with indistinct smoky-grey marks and small lanceolate spots. The under wing-coverts are whitish towards the roots, like the inner surface of the *remiges*. The under-side is bright greenish yellow, with little lanceolate black points to each feather; the lower tail-coverts deep red. The tail is exactly like that of *T. margaritatus*, only the spots here are yellow. Also in this new species the cross-band which *T. margaritatus* has on its breast is missing.

Length 6 in.; beak from gape 10 lin.; wings 2 in. 8 lin.; tail 2 in. 10 lin.; tarsus 106 lin.

The breeding and food of this bird are the same as those of *P. diadematus*. In its habits it is as sociable as *T. margaritatus*.

XII.—*On some additional Species of Birds received in Collections from Natal.* By John Henry Gurney, M.P., F.Z.S.

I beg leave to communicate for insertion in 'The Ibis' a short additional list of Natal birds, numbered consecutively to those published in my last paper on this subject ('Ibis,' 1860, pp. 203–221).

The birds and the notes included in the present list were received by me from Mr. Thomas Ayres, of D'Urban, except where I have specified the contrary. The specimens not sent by Mr. Ayres have been selected from two collections received from Natal by Mr. S. Stevens, of Bloomsbury Street, London.

One of these was transmitted to Mr. Stevens by Mr. Gueinzius, the other by Mr. Hilliard.

128. AQUILA BELLICOSA (Daud.). Martial Eagle.

Male. This Eagle was received from Mr. Gueinzius with the following ticket attached to it:—"Iris pale brownish (pale-ale colour); cere and toes lead-colour. Shot with a young goat in his talons."

129. SPIZAËTUS CORONATUS (Linn.). Crowned Eagle.

Female. Immature. Eye greyish brown; bill black. This noble bird was shot in a very dense bush: it had killed a monkey considerably larger than itself, and when discovered did not appear at all shy, but on being disturbed merely flew up on to the branches of a tree just above the monkey it had killed, and there remained.

Another Crowned Eagle subsequently visited our neighbourhood, which from its size must also have been a female. This bird carried off with ease one of my largest Cochin fowls, and attempted to take away a small pig; but failing in the effort, proceeded to kill it on the spot, and would have done so in a few minutes, had not the cries of the pig brought a lad to its assistance, who with difficulty frightened the Eagle away.

[This species is well figured in plates 40 and 41 of the volume "Aves" of Sir A. Smith's 'Illustrations of the Zoology of South Africa;' but plate no. 40, which is there stated to represent an adult bird, does, in fact, give the figure of an immature specimen, while plate no. 41, which is described as representing an immature bird, is, in reality, a correct delineation of the adult plumage. The sexes, which differ greatly in size, are alike in plumage, both when immature and when adult. The change from the earlier to the later state of plumage is accompanied by a contemporaneous change of colour in the iris, which passes from a pale brown to a clear yellow. I am able to speak with certainty as to these changes, having carefully observed them in two specimens in confinement. One of these was a male bird from Senegal, which is still living in my own collection; the other a female from Sierra Leone, which died recently in the gardens of the Zoological Society of London.

The latter specimen was presented to the Zoological Society by an officer who had been quartered at Sierra Leone, and by whom this Eagle had been captured in a singular manner, which it may be worth while here to mention:—

This gentleman, whilst in a canoe upon one of the rivers (by which the colony is intersected), observed this bird struggling on the surface of the water, and succeeded in approaching it sufficiently close to throw a blanket over it, and thus to secure it. The breast and bill of the Eagle bore traces of the blood and hair of some animal which it appeared to have recently captured, and to have endeavoured unsuccessfully to carry across the river, falling itself into the water in its attempt to retain its booty. The circumstance of the specimen procured by Mr. Ayres having killed a monkey "larger than itself" tends to give increased probability to the idea of such having been the cause which led to the capture of the living example in the manner just related. —J. H. G.]

130. CIRCAËTUS FASCIOLATUS, G. R. Gray, in Mus. Brit. Banded Harrier-Eagle.

[Sent to Mr. Stevens by Mr. Gueinzius: ticket attached as follows:—"♀. Iris pale yellow. Stuffed full with flying ants (*Termites*).—October, 1858."

The typical specimen of this bird in the British Museum (which was also sent from Natal) and the present example are the only two individuals of this species which have come under my notice. Both these specimens agree closely with each other, and the species appears to me to be a well-defined and good one, although (as stated in 'The Ibis,' vol. ii. p. 414, foot-note) it is very nearly allied to the *Circaëtus zonurus*, which Dr. Heuglin has so well described and figured (see 'Ibis,' 1860, pl. 15).

The *Circaëtus fasciolatus* is, however, readily distinguished from *Circaëtus zonurus* by the greater length of its tail, and by the five dark bands with which the tail is transversely marked, as well as by the anterior part of the inside of the wing adjacent to the carpal joint being transversely marked with brownish-grey bars, instead of being white as in *Circaëtus zonurus*.

I may take this opportunity of mentioning that, of the two specimens of *Circaëtus zonurus* from Bissao, preserved in the Norwich Museum, and referred to in the foot-note already quoted, one agrees very accurately with Dr. Heuglin's plate; but the other, though apparently not specifically distinct, differs in colour,—the throat and chest being white, the abdomen and thighs whitish brown, with no appearance of transverse bars, and the tail also of a pale dingy brown, showing no trace of the transverse bar across the middle, but only of that across the lower part. The plumage in this specimen is much faded and worn, apparently by the action of the sun and air.

The Norwich Museum also contains two other *Circaëti* from Bissao, which appear to me to be examples of *Circaëtus gallicus*, though they differ from any other specimens of that species which I have seen in having the whole of the under parts of a rusty-brown colour, resembling, in that respect, some of the immature specimens of *Circaëtus thoracicus*.—J. H. G.]

131. Falco peregrinus, Linn. Peregrine Falcon.

[Sent to Mr. Stevens by Mr. Gueinzius: no ticket attached; but apparently a female bird in nearly adult plumage. This is the only specimen of the true Peregrine Falcon which has come into my hands from any locality south of the Equator.—J. H. G.]

132. Falco minor, Bp. Rev. de Zool. 1850, p. 484. South African Peregrinoid Falcon.

[This specimen was also sent to Mr. Stevens by Mr. Gueinzius. The following ticket was attached to it:—"♀. Irides dark."

The plumage of this specimen bears considerable resemblance to that of the *Falco melanogenys*, Gould, of Australia, especially in the narrowness of the spaces between the transverse abdominal bars. Its size is about that of the male Peregrine. As this Falcon is but little known to naturalists, I may, perhaps, be permitted to refer the readers of 'The Ibis' to some interesting remarks respecting it, and especially as to the differences between this species and the small Falcon of North Africa (*Falco tunetanus* of Aldrovandus, *F. peregrinoides* of Temminck, Pl. Col. 479, and *F. barbarus* of Mr. Salvin, in 'The Ibis,' 1859, pl. 6), which are contained in pp. 29 and 30 of the 'Traité de Fauconnerie' by Professor Schlegel, who has there called this bird *Falco communis minor*.—J. H. G.]

133. MEROPS SAVIGNII, Swains. ex LeVaill. Savigny's Bee-eater.

Male. Eye bright crimson; legs and feet dark brown; bill black. Its stomach was full of a small kind of wasp. These birds take their food on the wing, and their flight somewhat resembles that of the Swallows; they frequently alight on the trees and bushes to rest; during flight they utter a harsh grating note. I believe they only inhabit the coast-lands, and are migratory, appearing only in the summer months.

134. BUCORAX ABYSSINICUS (Gmelin). Abyssinian Hornbill.

Eye very light brown; legs, feet, and bill black; skin of the neck and round the eye bright red. In the stomach of the male were snakes, beetles and other insects. These birds are gregarious, and to be found here all the year round, but are not very plentiful, generally three or four, sometimes more together. They are very fond of hunting for their food on ground from which the grass has been burnt; with their strong bills they peck up the hard ground, and turn over lumps in search of insects, making the dust fly again; having found an insect or other food, they take it up, and giving their head a toss, the bill pointing upward, appear to let the food roll down their throat. They also kill large snakes in the following manner*. On discovering a snake, three or four of the birds advance sideways towards it, with their wings stretched out, and with their quills flap at and irritate the snake till he seizes them by the wing-feathers, when they immediately all close round and give him violent pecks with their long and sharp bills, quickly withdrawing again when the snake leaves his hold. This they repeat till the snake is dead. If the reptile advances on them, they place both wings in front of them, completely covering their heads and most vulnerable parts. Their call, which consists of but one note repeated, a deep and sonorous *coo-coo*, may be heard at a great distance; I have myself heard it, under favourable circumstances, at a distance of nearly two miles. The call of the female is exactly the same *coo-coo,* only pitched one note higher than that of the male. The male invariably calls first, the female immediately answers, and they continue this for perhaps five or ten minutes, every now and then, as they are feeding. Their flight is heavy, and when disturbed, although very shy, they seldom fly more than half a mile before they alight again. At a distance they would be easily mistaken for turkeys, their body being deep and rather compressed, similarly to those birds, with the wings carried well on the back. The little pouch on the throat they are able to fill with air at pleasure—the male bird now sent doing this before he died.

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* The manner in which the Abyssinian Hornbill attacks the large snakes was first communicated to me by Mr. Ayres in 1858, and appeared in the 'Zoologist' for that year. Mr. Ayres having confirmed the statement in his present paper, I have thought it worth while here to include it, although not now published for the first time.—J. H. G.

I think their principal range of country is on the coast, and from twenty to thirty miles inland. They roost on trees at night, but always feed on the ground.

[Neither of the specimens sent by Mr. Ayres exhibited the full development of the remarkable elevation on the upper part of the bill which distinguishes the old males of this species.—J. H. G.]

135. BUCEROS BUCCINATOR, Temm. Trumpeter Hornbill.

136. TOCCUS CORONATUS (Bodd.). Crowned Hornbill.

[This species and the preceding one were both sent to Mr. Stevens by Mr. Gueinzius. The latter was ticketed, "♀. Irides yellow."—J. H. G.]

137. CHERA PROGNE (Bodd.). Progne Widow-bird.

Male. Eye nearly black. These beautiful birds are very plentiful in the inland parts of the colony and in the Free State and Trans-Vaal, but are seldom found within eight or ten miles of the coast. They are gregarious, there being perhaps one or two males to twenty or thirty females. In the months of December and January (the breeding season) the males assume their gaudy plumage (when their flight is in consequence heavy, but still, with or across the wind, they are able to sustain it a considerable distance), again shedding their tails in March. The females are brown, as are also the males, excepting in the months previously mentioned, the only distinguishing mark then being the red patch on the wing. They build in the reeds and long grass; their food consists entirely of grass seeds, and I have heard they do considerable damage to the Boers' crops of wheat and oats in the interior.

138. CURSORIUS CHALCOPTERUS (Temm.). Bronze-winged Courser.

Male. Eye dark brown; legs pale. The stomach of this specimen was perfectly empty. Of the habits of this bird I know nothing, this being the only one I have seen. It is excessively rare in this part of the country, though I believe plentiful in the interior.

139. TRINGOIDES HYPOLEUCUS (Linn.). British Common Sandpiper.

[Sent to Mr. Stevens by Mr. Hilliard.—J. H. G.]

140. GALLINAGO MAJOR (Gmelin.). British Great Snipe.

Male. Eye very dark; legs very light slate-colour; bill brown. I know but little of the habits of these birds; but they are migratory, appearing here in September and October, and leaving again in January or February. They are generally dispersed over the country, preferring the swamps on the flats to the hilly streams. They are usually found singly, but sometimes, when plentiful, may be put up in flights.

141. PLATALEA TENUIROSTRIS, Temm. Slender-billed Spoonbill.

Male and *female.* The eye of a light bluish grey; legs dark pink; bill bluish pink; skin round the eye red. The stomachs of these birds were crammed with shrimps. Of their habits I know but little; they are gregarious, and are frequently to be found with the White Ibis and other waders. They are extremely shy; I have not had an opportunity of seeing them feed. They generally fly in lines, or form the letter V.

142. PŒCILONETTA ERYTHRORHYNCHA (Gmel.). Red-billed Marbled Duck.

143. THALASSORNIS LEUCONOTUS (Smith). Fasciated Duck.

144. Pelecanus mitratus, Licht. Mitred Pelican.

[This species and the two preceding were sent to Mr. Stevens by Mr. Gueinzius.—J. H. G.]

145. Pelecanus rufescens (Gmel.). Pink-backed Pelican.

Male. Bill pale; tip of the bill bright orange; pouch, legs and feet greenish yellow. These birds frequent the bay and the mouths of the rivers on the coast; their food, I believe, consists entirely of fish. They appear to feed in the evening and early in the morning, basking in the sun during the day. They are gregarious, and may be seen in flights of from three to thirty, which occasionally come inland. In such cases, although I have seen them wheeling round and round close to the ground, I have not seem them alight, but have watched them until out of sight. In their flight they generally form the letter V, similarly to the Geese, &c. They are to be found here all the year round more or less, frequenting the most retired parts of the bay, and are exceedingly shy and wary. The bird now sent, when shot, was only pinioned, and falling into the water, gave me a long chase. It swam with such swiftness, that by the time I got into my boat it had three hundred yards' start. There being a strong head wind blowing at the time, I had the greatest difficulty in overtaking it, and rowed more than a mile before I was near enough to give the bird a second shot, which put an end to its existence. These Pelicans soar to an immense height, wheeling round and round, especially when coming from a distance. They appear to examine the waters well before they alight, and settle far out of gunshot of any cover there may be.

I may, in conclusion, here insert the following additional note, which I have received from Mr. Ayres, on

Astur melanoleucus (Smith). Black and White Goshawk.

"A few days since, I shot a very fine immature specimen of *Astur melanoleucus*, which had carried away successively three of my full-grown hens, of the ordinary size, seven ducklings about one-third grown, four or five good-sized chickens, and one gosling as large as a full-grown fowl. Yet so cunning was this bird, that it committed all this havoc before I could get a single chance of killing it. It would suddenly appear from amongst the trees, close to the ground, and seizing its victim, retire to the bush, where the sportsman stands but a very poor chance of seeing the bird before being seen by it.

XIII.—*Notes on a living specimen of a singular Grallatorial Bird from New Caledonia.* By Dr. George Bennett, F.Z.S.*

I reached Sydney on the 12th of November, having left Southampton on the 20th of September. A few days after my arrival, I observed a bird in the aviary at the Botanic Gardens here, which appears to me to be new. This living specimen and another, now set up in the Sydney Museum, were received as presents from M. Des Planches, Surgeon of H.I.M.S. "Sibylle," who brought them from New Caledonia. This bird is said to be plentiful there near the sea-coast, and is named by the natives *Kagu.* It has a large and handsome crest, which is always carried depressed, and which we could only get it to elevate by frightening it on placing a Hawk in the same compartment with it. Upon this being done, after running about, the bird elevated its crest; but I could not observe that it spread it out to any extent, although, on examining the stuffed specimen, the crest appears capable of being spread out as well as of being simply raised, as may be seen in the drawing sent herewith. The second drawing represents the crest in repose. The head and crest are of a light greyish colour, the longer feathers of the crest being of a lighter tint. The back, neck, and wing-coverts are of a dark penciled grey with brown markings, the latter varying according to age, and the long pinion feathers when spread are elegantly barred with reddish brown. On being chased the bird runs with great rapidity, never attempting to fly. On being caught it uttered a loud screaming noise, and it was only on such an occasion that it was ever heard to utter any sound. The form of the bird, together with the peculiar beak and Rail-like feet, are well displayed in the sketches, which have been kindly made for me by Mr. G. Krefft, the Assistant Curator of the Sydney Museum. The bill, legs, and feet in the living specimen were of a reddish orange colour; in the stuffed specimen, in its recent state, they were of a bright scarlet colour, evidently varying from age or other causes. The irides are brown. The bird appears to be very hardy, and, as I have been informed, is not rare in its native country. Should it prove to be an acquisition, no doubt specimens could be procured and sent to the Zoological Gardens in the Regent's Park. It feeds upon insects, mice, birds, and raw meat, which it usually devours entire; it is very ravenous for food, and often evinces some degree of pugnacity when meddled with. It runs with great rapidity, compressing the body and elongating the head and neck in a manner seen to obtain among the Rails. In the same compartment in the aviary is a living specimen of the New Zealand Rail, the *Weka* of the natives (*Ocydromus australis,* Sparrm.). The actions of these two birds are similar; and there is also a marked resemblance between them in the structure of the toes. They are both fond of digging in the earth for worms and searching about the grass for insects, snails, &c.; but the New Caledonian bird, when not disturbed, has a more stately walk than the Rails, and in that respect approaches the Herons or Cranes. It appears to me to form a link between the *Gruidæ* or Cranes and the *Rallidæ* or Rails, which, however, will be more easily decided when an opportunity occurs of examining its anatomy, and more especially its osteological structure. No doubt before long we shall be able to procure specimens for this purpose, when I will communicate with you again on the subject*.

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* From a letter addressed by Dr. Bennett to the Editor, dated Sydney, November 21st, 1860.

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* This bird is the *Rhinochetus jubatus,* Verr. et Des Murs, described and figured in the 'Revue et Magasin de Zoologie' for last year (1860), p. 440. pl. 21, from a single example preserved in the "Exposition des produits des Colonies" at Paris. It has been referred by the describers (MM. J. Verreaux and Des Murs) to the Herons (*Ardeidæ*), but is certainly a strange and very interesting form, probably, as Dr. Bennett has suggested, connecting the Rails with the Herons. As no details have been given concerning its habits, Dr. Bennett's account of them is of great interest, and we sincerely trust that he may be able to carry out his intention of sending living examples to England. At present the specimen in Paris is the only one known, so that skins and skeletons of this bird would be also much valued in this country.—Ed.

XIV.—*Quesal-shooting in Vera Paz.*

By Osbert Salvin, M.A., F.Z.S.

As the greater part of this account of the mode of collecting Quesals (*Pharomacrus paradiseus*), as pursued by the Coban hunters, was written at the time in the form of a diary, I have thought it best to preserve it in the same shape throughout.

March 1.—Rain all day and every day is what one must expect to encounter on visiting Coban. Such was the weather in November, and now, the month of March brings no signs of the dry season, when in Guatemala people have almost forgotten what rain is. When travelling from place to place, the fates have in general been propitious, and on coming here they did not desert me. Two fine days enabled me to reach Coban from San Gerónimo with a dry skin, but the next day the usual driving, misty rain greeted us on rising, and morning after morning brings no change for the better. Luckily, I have found plenty of indoors work in arranging and labelling the collections made during my absence. Moreover, Coban has this advantage. A mere hint at what branch of natural history one has a leaning towards is sufficient to bring in specimens in an almost unbroken stream. Boy follows boy, till one hardly knows which way to turn to stow away the spoils in the shape of birds, snakes, lizards, toads, frogs, &c., and no small amount of time is occupied in paying these young rascals (for they all try to cheat) for their captures. Like everything else, my work appears to have an end. The birds are finished and packed, novelties are no longer brought in. The period of my stay being limited, idleness cannot be long endured, and I am determined, rain or no rain, to be off to the mountain-forests in search of Quesals, to see and shoot which has been a day-dream for me ever since I set foot in Central America. Having secured the services of Cipriano Prado, the most successful Quesal-hunter in Coban, and at the same time a bird-collector of no mean ability, and also of Filipe Sierra, another hunter of Coban, we are beginning to prepare for the journey. It is necessary to take provisions, and we are accordingly laying in a stock of salt meat, 'pixtones' (round maize cakes ¼ of an inch thick), 'tamalis' (maize puddings), and 'topopoxti' (thin maize cakes not unlike oat-cake), all of which have to be started the day previous to our own departure, on the backs of five Indians. Our proposed hunting-ground is distant three days' journey from Coban, two of which lie along a road passable for mules. We therefore reckon on catching up our cargoes on the second day, and then proceeding on together. The road we intend to take is that between Coban and Cajabon, which we follow as far as San Agustin Lanquin, and leaving our animals there to be sent back to Coban, make for the ridge of mountains to the northward, and follow them in a westerly direction towards Coban.

March 6.—The road over the Mico mountain near Yzabal, so graphically described by Stevens, is a trifle to that which we have just passed,—slippery clay, mud and stones combining to make progress difficult, and falling easy. In fact, it was just about as bad a road as one could pass mounted. Cipriano in descending a hill was stretched on his back. Though he complains a good deal of himself, his gun, I think, will prove to be the worst sufferer, as an old crack in the stock has opened and we have been obliged to tie it together with string, after the fashion of Gordon Cumming's rifle. My mule was down on her knees several times, but we both managed to rise together. Filipe fared no better. To-night we are to sleep under a rancho or 'ermita,' that is to say, a roof upon poles sheltering three crosses. Few of these roadside huts have any walls. Small as our lodging is, it affords shelter to some twenty-five souls; for besides ourselves, and an Indian to carry the hammocks and a change of clothes, some twenty Indians are congregated here for the night, some bound for Coban, some in the opposite direction, but all carrying their cargoes of onions, maize, &c., for sale or exchange. In my hammock I swing clear of everything except the smoke from the wood fire, the least objectionable of evils attendant upon a night spent in an Indian rancho. My blankets I had sewn into bags before leaving Coban, so that I am well provided against cold, which in the mountains is sometimes severe. This plan of sleeping in a bag is well adapted for a hammock, where covering below as well as above is necessary, as this desirable end is not so easily or so effectually arrived at by means of the ordinary blanket.

March 7.—Soon after starting I shot a fine specimen of *Accipiter erythrocnemis,* and shortly afterwards one out of a pair of *Ictinia plumbea.* This last species seems to be particularly partial to patches of pine trees, which grow at intervals all through the Alta Vera Paz. The road was no improvement upon that of yesterday, and though we had not far to go, it was late in the afternoon when we reached Lanquin. Finding that Fray Domingo Lopez, the Padre Cura of Cajabon, was in the village, we went to the convent and there put up.

March 8.—As it is necessary to take a 'practico' or guide with us to the mountains, I had purposed spending a day in Lanquin to find one, and also two Indians, as two of those hired at Coban have to return with the mules and saddles. A guide is absolutely necessary, as my companions have never explored these districts; and a knowledge of those parts most frequented by the Quesals, as well as of the springs of water, is indispensable to the success of the expedition. Moreover we might lose ourselves in these forests for days, and the consequences would be serious. Most places have their 'lion,' and Lanquin is not an exception to the rule; the 'lion' in this case being a cave, out of which the river of Lanquin emerges. This stream helps to swell the river of Cajabon, and finally flows into the Polochic. The interior of the cave is said to be beautifully festooned with stalactites. It becoming known that we have resolved on an inspection of it, a number of Indians, boys and men, follow us from the village, and these, with two I have hired to carry pine for torches, swell our party to some twenty individuals. Each takes his bundle of chips, and all having fired their torches, we go in. These caves are always curious and interesting to see; but the half-naked Indians, each with his lighted torch, scrambling about the rocks in all directions and shouting to the echoes, enhance the strangeness of the scene. After winding in and out and climbing up and down among slippery stones, now stooping to pass a narrow opening, now gazing upwards into vacant blackness or downwards into similar obscurity, we reach the point where the river flows at the bottom of the cavern, not in an unbroken stream, but among large masses of rock, over which we scramble. Having satisfied curiosity, and the torches beginning to dwindle, I sound a retreat, as, had we been left in darkness, no amount of groping would bring us out. This cave would appear to be of great length; the river that flows from it forms no mean stream. On leaving the cave I begin to collect ferns, many species of which are growing about the rocks and surrounding trees*. Whilst thus engaged, a shower of fruit from a neighbouring tree calls my attention, and looking up, I spy a 'Mico leon' (*Cercoleptes caudivolvulus*) regaling himself on a well-loaded bough. I immediately send a boy back for my gun, which I have left at the mouth of the cave, intending to return. Mico leon however makes off, but Cipriano and Filipe are soon on his track. The latter fires a shot, and I another, when the animal falls into the water and swims to the other side. Not being able to climb the bank, two Indians strip off their only garment, swim the river, despatch Mico leon, and bring him over between them. These Indians swim well and rapidly, striking out first with one arm and then the other, throwing each out of the water at every stroke.

March 9.—A downpour of rain, misty, drizzling, continuous. However, Cipriano and I pay a visit to the cave, but the forest being too wet to shoot, and rain falling, I collect ferns and land-shells under the shelter of the overhanging rock. On returning to the convent I am for the rest of the day beset with Indians, men and boys, women and girls, bringing lizards, snakes, &c., showing the same excellent collecting qualities as the Coban Indians.

March 10.—Still raining in the same incessant way,—not a thunderstorm and clear sky afterwards, as during the rainy season in the neighbourhood of Guatemala. At Coban and the Alta Vera Paz, it seems to rain at any hour and at any season.

March 11.—Still in Lanquin, but the weather decidedly improving. During the afternoon we go out to shoot. Observing on a pine-tree about a dozen nests of *Ocyalus wagleri*, with which the old birds are busy, I send for an axe and have the tree cut down, but find neither eggs nor young in the nests. The birds were only preparing to breed. Besides this colony I see little of interest—a few Toucans (*Ramphastos carinatus*) and other common birds.

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* The collection I made during this expedition, as well as all that I obtained in other places, I have submitted to Sir W. Hooker, who has most kindly named the whole for me. Amongst the species are several novelties.

March 12.—Off to the mountains at last, with a fine day and a fair prospect of success. The road after crossing the river strikes off to the northward—a mountain track winding among the hills. Soon after entering the forest a river crosses the path—a foaming torrent—a fall into which gives no hope of escape. A felled tree, one of the largest of the forest, forms the bridge, over which, slippery with moss and foam, we have to pass. For ourselves it is nothing; but I must say I tremble for the Indians, each of whom carries his 75 lbs. of cargo. In the worst and most slippery part the foot-hold is somewhat improved by the tree being notched with a 'machete,' but still it is as dangerous a pass as I ever crossed. After half an hour's delay we reach the other bank. One 'mozo' only turned faint-hearted, and another carried his pack across. From the river the path becomes very precipitous, and we continue to climb till we reach the foot of a rock, where we find a deserted rancho and take possession. A fire having been made to heat the pixtones, we dine, and afterwards start for the forest close by to look for Quesals. On entering, the path takes the unpleasant form of a succession of felled trees, which are slippery from recent rains, and render progress slow. My companions are ahead, and I am just balancing myself along the last trunk, when Filipe comes running back to say that they have heard a Quesal. Of course, being especially anxious to watch, as well as to shoot one of these birds myself, I immediately hurry to the spot. I sit down upon my wide-awake in most approved style close to Cipriano, who is calling the bird, and wait, all eyes and ears, for the result. I have not to wait long. A distant clattering note indicates that the bird is on the wing. He settles—a splendid male—on a bough of a tree not seventy yards from where we are hidden. Cipriano wants to creep up to within shot, but I keep him back, wishing to risk the chance of losing a specimen rather than miss such an opportunity of seeing the bird in its living state and of watching its movements. It sits almost motionless on its perch, the body remaining in the same position, the head only moving slowly from side to side. The tail does not hang quite perpendicularly, the angle between the true tail and the vertical being perhaps as much as 15 or 20 degrees. The tail is occasionally jerked open and closed again, and now and then slightly raised, causing the long tail-coverts to vibrate gracefully. I have not seen all. A ripe fruit catches the Quesal's eye, and he darts from his perch, hovers for a moment, plucks the berry, and returns to his former position. This is done with a degree of elegance that defies description. The remark has often been made by persons looking at stuffed Humming-birds, "What lovely little things these must look in life, when they are flying about!" But they do not. Place a Humming-bird twenty yards from you, and what do you see of its colours, except in the most favourable position and light? This is not the case with the Quesal. The rich metallic green of the head, back, and tail-coverts reflects its colour in every position, whilst the deep scarlet of the breast and the white of the tail show vividly at a distance, and contrast with the principal colour of the body. The living Quesal strikes the eye by its colour at once. It stands unequalled for splendour among birds of the New World, and is hardly surpassed among those of the Old. Such are my reflections, when a low whistle from Cipriano calls the bird nearer, and a moment afterwards it is in my hand—the first Quesal I have seen and shot.

This same evening we hear the cries of another pair of Quesals, but they refuse to listen to the voice of the charmer. A long chase after a pair of Pauhil (*Crax globicera*), which results in an ineffectual shot, now brings the day to a close, and, the path being neither very clear nor good, I think it best to return. On my way back I shoot a specimen of *Sclerurus mexicanus*, a bird I have never seen before. Its habits much resemble those of a Wren. I never saw either this individual, or others met with subsequently, climbing like a *Dendrocolaptes*, but usually hopping about the brushwood, and frequently on the ground, scratching among the dead leaves. The cry of the *Sclerurus* is shrill and may be heard at some distance.

There is one bird in these forests which I became acquainted with, but was unable to procure. Nor could I obtain a more satisfactory account of its appearance than that it was coffee-coloured, and about the size of a small Thrush. Its song, which I heard frequently, is most peculiar, and comprises some of the highest notes I ever heard from any bird. It is clear and melodious, without having any great variation. The name commonly applied to it is the '*ruiseñor,*' or Nightingale. I think it probable that the bird may be one of the numerous Wrens found in the country.

The cries of the Quesal are various. They consist principally of a low double note, "*whe-oo, whe-oo,*" which the bird repeats, whistling it softly at first, and then gradually swelling it into a loud but not unmelodious cry. This is often succeeded by a long note, which begins low, and after swelling dies away as it began. Both these notes can be easily imitated by the human voice. The bird's other cries are harsh and discordant. They are best imitated by doubling a pliant leaf over the first fingers, which must be held about two inches apart. The two edges of the leaf being then placed in the mouth and the breath drawn in, the required sound is produced. Cipriano was an adept at imitating these cries, but I failed in producing them for want of practice. When searching for Quesals the hunter whistles as he walks along, here and there sitting down and repeating the other notes. As soon as he hears a bird answering at a distance he stops, and imitates the bird's cries until it has approached near enough to enable him either to shoot it from where he stands, or to creep up to within shot. The female generally flies up first and perches on a tree near the hunter, who takes no notice of her, but continues calling till the male, who usually quickly follows the female, appears. Should the male not show himself, the hunter will sometimes shoot the female. Thus it is that so large a proportion of males are shot. The flight of the Quesal is rapid and straight; the long tail-feathers, which never seem to be in his way, stream after him. The bird is never found except in forests composed of the highest trees, the lower branches of which (*i. e.* those at about two-thirds of the height of the tree from the ground) seem to be its favourite resort. Its food consists principally of fruit, but occasionally a caterpillar may be found in its stomach. The colouring of the soft parts is as follows:—Iris very dark hazel. Eyelid black. Bill yellow, with an olive tinge at the base, extending over the nostril along one-third of the upper and two-thirds of the under mandible. Legs and toes olive; soles of the feet more yellow. Claws horny olive.

The following morning, March 13, we make an early start for the same forests, intending to take a wide circuit and return to our camp under the rock the same evening. Five Quesals and a Pava (*Penelope purpurascens*) are the result of our day's work.

March 14.—Having accomplished the great object of my expedition, viz. to see a Quesal myself, I find my time too valuable to bestow more attention on them, when so many other objects of interest lie within my reach. I accordingly leave Cipriano and Filipe to hunt up birds, whilst I confine my attention to the ferns, shells, &c. I have never visited these forests of Vera Paz before, and my impression is that they are almost the best worth seeing of anything in Guatemala. The forests of the coasts are rich in all the beauties which have been the theme of so many travellers, but they have their disadvantages. The excessive heat is always a drawback; and if garrapatas abound, one's enjoyment is gone. In these mountain-forests it is otherwise; no garrapatas, no mosquitos, and a climate that in the dry season might challenge any in the world. Most parts are '*montaña limpia*' (forest free from brushwood), and one may ramble where one pleases, without being stopped by dense thickets. What strikes the eye most is the number of ferns, not only of plants, but species. Every tree is clasped and every stone clothed with them. Besides, there are many arborescent species, and others of terrestrial habit. Palms of low growth and various form also are a marked characteristic of the forest. Few sounds are heard; the low murmur of insects contrasts strangely with the din of the coast forests. Birds are not often met with. An occasional Creeper (*Dendrocolaptes*) may be seen or its cry heard; the peculiar thrilling notes of the Ruiseñor, the distant call of a Trogon, the cooing of a Pigeon, the melancholy wailing of the Pava (*Penelope purpurascens*), or the noisier call of the Colola (*Tinamus*), include nearly all the sounds one hears from the feathered tribes. Should, however, a troop of Monos (*Mycetes palliatus*?) be within hearing, every echo of the forest is awakened with their discordant bellowings, which it is no exaggeration to say may be heard at the distance of a league.

March 15.—After some delay we start westward again, as, from what we can gather from the Indians, it seems evident that we have reached the limits of the Quesals in this direction, and the country between us and Coban seems to offer the best prospect of success. The only mishap that overtakes us is the leakage of my large bottle full of reptiles. On examination the cork proves imperfect—a defect easily remedied, had not the Indian who carried it got it into his head that the rum having snakes in it would produce festering sores wherever it touched him! After a great deal of arguing on the subject, I induce one of the guides to take charge of the maligned bottle. That night we reach a large 'ermita,' where we sleep, and secure another guide for the next day to conduct us to the district of Rashchay, said to abound with Quesals.

March 16.—On going out I perceive a pair of *Ictinia plumbea* preparing to build in a pine-tree close to the rancho we have been sleeping in. As there is no chance of procuring the eggs, I secure the birds for my collection. On entering the forest, a fine male *Trogon massena* falls to Cipriano's gun. This, three Quesals, and a few other birds, form the day's bag. A rancho half in ruins in a small clearing in the forest gives us shelter to-night. We prop up one corner, which has a deplorable tendency to droop for want of its corner post, and patch up the most open places in the roof with the extra stock of 'suyacales' (mats made of reeds to cover an Indian's pack) we have brought from Lanquin. Filipe's hammock gives way on the first trial and lets him down with a run; mine seems inclined to remain where it is.

March 17.—A heavy rain tests our last night's repairs, and it requires no small amount of managing to place ourselves and our baggage out of the drops that fall in many places from the roof. The day clears up at 10 o'clock, and I send Cipriano and Filipe in different directions with a guide apiece to shoot Quesals, whilst I and the third guide search for other things.

My bag to-day consists of a Swift (*Chætura vauxi*), two specimens of a beautiful Tanager (*Pyranga erythromelæna*), and a large addition to my collection of ferns. Cipriano and Filipe bring in seven Quesals between them, and one of the guides a single specimen of *Vireolanius pulchellus.*

March 18.—As my time is limited, I have decided to remain in this spot, which seems likely to be productive, as long as I can, and then return straight to Coban. All to-day Cipriano and Filipe have been out; I have been chiefly occupied in skinning the specimens which resulted from yesterday's excursion. I have taken no small amount of pains to secure good examples for my own collection, as I wish my Trogon-drawer to look as well as possible. To-day Cipriano and I have had a long chase after some Parrots, one of which we have at last secured*. It cost us many a fruitless shot, as the trees in which we find them are of great height, and a bird at the top of one of them is almost out of gun-shot. We had just secured this bird when a distant noise warned us of approaching heavy rain, and we had just time to reach our camp when a thunderstorm came on—a real tropical storm. It is astonishing to notice the noise rain makes in the forest when striking the leaves of the trees. An approaching storm may be heard many minutes before the rain comes up.

March 19.—All last night rain fell in torrents, accompanied by thunder and lightning. Rills of water we had stepped across yesterday are now small rivers, and the whole night long we could hear the crash of falling trees. My companions were seriously alarmed lest we should be swept away. I did not share their anxiety, as the limits to which watercourses rise are easily traced, and I knew that we were safe. The downfall of our rancho was a danger much more imminent. To-day we have a long journey before us, and I order an early break-up of the camp. On the road we shoot several Quesals, and I add materially to my collection of ferns. The day is far advanced when I find that our guide has missed his way, and knows no more about the road or where he is than one of us. During the day I had not paid much attention to the course we were taking, except to know that we were going nearly in the right direction. My pocket compass now comes into requisition, and starting on the principle that a path must lead somewhere, we strike the most likely-looking route, which in time brings us to an uninhabited rancho in a clearing of Indian corn. In this we establish ourselves for the night.

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* This bird proved to be an undescribed species. It now stands as *Pionus hæmatotis*, Scl. et Salv., and a drawing of it will be found in the second volume of this Journal, plate 13.

March 20.—As no one seems to have a very clear idea of the road, I, compass in hand, undertake the direction of affairs. Three hours' walk brings us into a part of the country known to Cipriano, and we presently strike a road which takes us over a high range of hills which we were skirting all yesterday. While ascending, I observe several Swallow-tailed Kites (*Elanoides furcatus*) soaring above me. This bird has wonderful powers of flight: no eagle or vulture could sail more easily or gracefully in the air. Like *Ictinia plumbea*, I believe that this species breeds in the patches of pine trees which are found here and there throughout the forest. I gather this belief from common report. A little Indian village, by name Kohak, is our resting-place to-night. Here we are all billeted upon some Indians inhabiting a large long rancho with a family at each end. The inmates seem to have a decided turn for music, and we have not long established ourselves when Cipriano pitches upon a guitar and Filipe on a harp. They are now hard at work, accompanied by an Indian playing on a kind of drum, knocking out Indian tunes as fast as they can remember them. I have made myself comfortable for the night in my hammock, and am endeavouring to fancy myself in the act of being soothed to sleep by the dulcet strains that assail my ears. A long day's work is likely to be more effectual.

March 21.—Nine leagues yet to walk before we reach Coban. I give out that I mean to finish our journey to-day; the rest say no. Mountain fare has left me in capital training, and I feel confident of doing it if I can only get the Indians along. To lighten their loads I hire another Indian, so that they have no excuse for lagging. Four leagues brings us to the Lanquin road, and we eat the last of our 'toppoxti' at a place called

Kakiton. Here I cheer the Indians with some of their favourite drink, '*chicha,*' which is neither more nor less than fermented liquor before it is distilled. I then walk on and reach Coban at half-past five o'clock. My companions and the Indians arrive at eight o'clock, and thus bring my last expedition in Guatemala to a conclusion.

XV.—*Notes on the Birds of the Falkland Islands.* By Captain C. C. ABBOTT, late in command of Detachments in the Falkland Islands.

THESE notes are the result of personal observations made during a residence of three years, from February 1858 to October 1860, at Stanley, the seat of government of the Falkland Islands, whilst I was in command of the detachments of troops stationed there. During this period I made frequent excursions into the interior of the island, both north and south, and lost no opportunity of collecting specimens myself, and of obtaining information relating to the birds and other objects of natural history by every means in my power. I also sent home a large number of skins and eggs, which have now found their way into the different Museums of Europe.

1. CATHARTES AURA (Linn.)[*]. (Turkey Buzzard.)

Turkey Buzzards are very common in East Falkland, remaining the whole year round and breeding. They lay their eggs, two in number (but sometimes three), under a high bank amongst bushes, or on the top of a dead balsam log, without constructing any sort of nest. The time of their laying is about the first week in November. I have remarked that the young birds of the first year have the bare space on the head and neck of a bluish colour, as also the feet. In the mature bird these are both pink. These birds go in pairs the whole year round, though of course any dead carcase will bring many of them together.

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[*] The scientific names here given are those adopted by Mr. Sclater in his "Catalogue of the Birds of the Falkland Islands" (Proc. Zool. Soc. 1860, p. 382, and 1861, Feb. 12th). The English names, added in parentheses, are those employed by the colonists for the species known to them.

2. Milvago australis (Gmel.). (Johnny Rook.)

This is one of the commonest birds in East Falkland. One or two of their nests are sure to be found near a Penguin-rookery. During an expedition which I made to the North Camp, in December 1860, I found at least fifteen nests along the cliffs of the north shore. All these had two young ones in them covered with down of a light-yellow colour. The nest is generally composed of the dead fibres of the Tussac-grass, and frequently has some sheep's wool in it. The eggs are laid in the first week in November, and are generally two, sometimes three, in number. In a nest that I once robbed of three eggs, on going to it again about a week later, I was surprised to find two more laid, one of which was a very light-coloured one. Mr. Darwin has well described the bold habits of this bird, though he appears to be in error in supposing that they only breed on the adjoining islets. I once had my cap knocked off by this bird while taking its eggs, and had it not been for a friendly piece of Tussac growing near, I should have fallen into the sea from the perpendicular cliff where the nest was situated. Another curious incident occurred to me with reference to this bird at Hope Place. On going to take the eggs out of a nest situated on a dead Tussac-root, I heard a rustling at my feet, and on looking down I saw a Loggerhead Duck (*Micropterus cinereus*) vacating her nest. This had evidently been formed out of the fallen particles of the previous year's nest of the *Milvago leucurus*. The Duck left five eggs and a young one in her nest, which seemed to me at the time to have been placed in a most singular situation; but I afterwards recollected that the Loggerhead had chosen her position first (laying in September), and could not have known at the time that she was likely to have such dangerous neighbours. The *Milvago*, although bold in some respects, is in others a great coward, and will never attack any other bird except the latter be wounded. I have seen the Black Oyster-catcher drive it away from its eggs.

On one occasion I shot one of these birds for a specimen, and, while it was lying on the ground wounded, another came down and would have killed and eaten it before my eyes had I not interfered. The young birds of this species never get their full plumage till the second year: their beak and feet, which in the old birds are yellow, are of a slaty colour, and their feathers are also of a more sombre hue, and have no white about them.

3. Buteo erythronotus (King).

It is not generally known that only the female of this bird has the deep-red back, whence Captain King chose his name for the species. The back of the male, which is considerably smaller than the female, is of a slaty blue. The young birds are of a mottled brown, with arrow-headed marks on the upper part of the breast.

This Buzzard, which is common in East Falkland, lays two (though sometimes three) eggs. The nest, which is generally situated on a cliff near the shore, or high rocks in the camp, is composed of the dry sticks of the two Falkland-Island bushes, with generally a piece of dry grass on the top, and the nests appear to be built up higher every year. A singular nest, which I saw at Salvador Bay, was built in the open camp, on a small bush, and was, I should think, 5 feet high from the ground. The eggs are laid about the beginning of October, although I have taken a single egg in September. In those parts of the island where there are many wild rabbits these birds are much more plentiful than elsewhere, rabbits being their principal food.

4. Buteo poliosoma (Q. & G.): *B. varius*, Gould.

I have three times taken the nest of this bird, the young of which has been described as a new species by Mr. Gould. As neither the male nor the female, when adult, have any white on their breasts, and in this respect differ completely from *Buteo erythronotus*, there cannot be a doubt of its being a good species. This Buzzard also builds invariably on the sea-shore, laying two, and occasionally three eggs. Its nest is composed of sticks, and the time of laying is the beginning of October. I once had considerable difficulty in robbing the nest of this bird. I found a nest at Eagle Point, and not expecting to have any trouble in procuring the eggs, I shot the old bird. When I came to climb the cliff, I found the nest was situated in a precipitous place completely overhanging the sea, and about ten feet below me, so that, having no means of reaching it, I was obliged to return to camp minus my eggs. On my return next day with an old tin pot, some string, and two ramrods belonging to my friends, I was glad to find the eggs still there, not having been eaten by the Johnny Rooks, as I had rather expected. I tied the three ramrods together and attached to them the tin pot. Thus I was able to reach the eggs; but, unfortunately, after one or two attempts to fish them up, the bottom ramrod became disengaged and stuck in the nest, leaving me without any means of obtaining them. Being determined not to be beaten, I started off next time from the camp (three miles from the nest) with a large boathook, a tin pot, and a lasso, and this time, having a friend to assist me (for although I could lower the boathook into the nest, I could not see, from the position I was in, when I had an egg in the pot), I got all the three eggs, one after the other, and returned at last, pleased with my success.

5. Circus cinereus, Vieill.

I have never found the nest of this bird in East Falkland, but that they breed there is certain, as they occur the whole year round: they are, however, far from plentiful. I fancy they may breed on the contiguous islands. I have observed young birds of this species follow me out rabbit-hunting, and I have seen them swoop at a rabbit, but I never saw them kill one. One of these Harriers was shot near Stanley whilst endeavouring to carry away a fowl. They are bold for their size, and very swift in the air. The plumage of the young birds is of a mottled brown.

6. Otus brachyotus (Gmel.) (Owl.)

This is a scarce bird in East Falkland. It breeds in the long grass, as I have been informed, but I never found a nest. At Port Louis this species comes about near the houses at night in quest of mice, but I have never seen them near the town of Stanley.

7. Turdus falklandicus, Quoy et Gaim. (Common Thrush.)

This bird is generally found among the rocks of the mountains, though sometimes frequenting the gardens in Stanley in search of grubs. I have found a Thrush's nest as early as the 19th of September. This was in a valley near Port Louis. The nest, which was neatly formed, was composed of dry grass, and contained two eggs. I have also found the nest of this bird amongst the rocks. I do not believe that it ever lays more than two eggs.

8. Cistothorus platensis (Gm.). (Wren.)

How singular it is that this little bird should exist in such a place as the Falklands, where, if disturbed on a windy day, its power of flight is so weak that it is carried away by the wind! Whenever I wanted a specimen of this bird, I always followed it and knocked it down with my cap as it was creeping through the grass like a mouse. I have never been able to find its nest. This Wren must have a game scent, as my dog has sometimes pointed to it when after Snipe.

9. Anthus correndera, Vieill. (Titlark.)

I suppose that this bird leaves East Falkland about the end of April, after having finished breeding; at any rate I have never in all my wanderings seen one of them later than this period of the year. They return to the vicinity of Stanley about September, and breed in the beginning of October, laying three eggs in an open cup-shaped nest at the root of the long grass.

10. Sturnella militaris (Gm.). (Red-breasted Starling.)

This Starling, which is very common in East Falkland, begins to breed in the first week in October. The nest is built amongst long grass or rushes. It is rather deep, but open at the top, and not domed over, and generally contains three eggs. This bird sits on a bush and sings very sweetly on a summer's morning.

11. Phrygilus melanoderus (Q. et G.). (Sparrow.)

This bird, which is called 'The Sparrow' in East Falkland Island, is plentiful everywhere, summer and winter. It breeds in the latter end of September and beginning of October, laying three eggs in a nest situated under the shelter of a tuft of grass. In the winter the plumage of the male loses all its rich colour and assimilates to that of the female. Of the second so-called species of this genus, *Phrygilus xanthogrammus*, I know nothing, and I do not believe it different from the former.

12. Chrysomitris magellanicus (Gm.).

One of these little birds was killed in a garden near Stanley, out of a flock of five, in August 1860. The example is now in Mr. Sclater's collection. This is the only instance I know of its occurrence in East Falkland, but it is said to be very common in Keppel Island.

13. Cinclodes antarcticus (Garn.).

This bird is not found except on the coast, and the only place I have ever met with it is in Kidney Cove, on the island called Kidney Island. Here it is very abundant, and breeds among the Tussac, but I have never seen the eggs or obtained the nest. I do not believe that there is any second species of this genus found in East Falkland, although Mr. Darwin states that *Cinclodes patachonicus* is "common *" there. Nor have I ever seen or heard of any such bird as the *Scytalopus magellanicus*, also mentioned by Mr. Darwin.

14. Muscisaxicola macloviana (Garn.). (Wheatear.)

This bird, which is not very common in East Falkland, is generally found near the shore. It is very much like a Wheatear (*Saxicola*) in its habits. During the breeding season it resorts to the stone-runs, or watercourses, where it breeds, no doubt, though I have never found its nest.

15. Chionis alba, Forst. (Kelp Pigeon.)

Of this curious bird one or two are generally to be found on the rocks of the south shore, but it is more plentiful near the Penguins' rookeries. Limpets and shell-fish seem to be its principal food, as far as my experience goes. In this respect its habits are very much like those of the Oyster-catcher. The sealers inform me that it breeds on New Island, near the Penguins, and lays white eggs. As I have seen these birds here all the year round, and never found their nests, I conclude that those that stay here during our summer are young birds.

16. Attagis malouinus (Bodd.).

I shot an *Attagis*, probably of this species, on the beach at Mare Harbour, in the beginning of October 1859. It was the only one I ever saw.

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* Zool. Voy. Beagle, iii. p. 66.

17. Hoplopterus cayanus (Lath.). *Philomachus cayanus*, Darwin, Zool. Voy. Beagle, iii. p. 127.

I obtained a single specimen of this Plover in 1860, and sent it to England. It was shot near Stanley; and another was seen a short time afterwards.

18. Eudromias urvillii (Garn.). (Dotterel.)

It may safely be said that this is a migratory bird in East Falkland. The Dotterels first appear in the beginning of September, when the dry peat-banks in all parts of the island are covered with them. Their breast-plumage is then of a beautiful red. They lay the first week in October (as appears from my note-book), placing their eggs, which are two in number, on the dry moss, without making any nest. The eggs are so nearly the colour of the surrounding ground that one almost treads on them before seeing them. I have sometimes, however, found their eggs placed under the shelter of a bush. After the breeding season the bright colour on the breast of these birds fades away. In the month of February they commence to gather in flocks along the coast, and by the end of April disappear entirely, and do not return until the end of August or beginning of September of the following year. I have observed that these birds always leave their eggs when any one approaches and walk away, calling all the time. Of an afternoon, however, I have disturbed them off their nests: they appear then to sit more closely.

19. Ægialites falklandicus (Lath.). (Double-ringed Plover.)

This Plover is a spring visitor, arriving about the beginning of September, and breeding shortly afterwards, although I have also found a nest with fresh eggs in it in October. The eggs, three in number, are generally laid on a bank at a short distance from the beach, without any nest, being merely deposited in a hole.

20. Hæmatopus ater, Vieill. (Black Oyster-catcher.)

The Black Oyster-catcher remains in East Falkland the whole year round, laying its eggs (two in number) in the beginning of November, just one month later than our other Oyster-catcher (*Hæmatopus leucopus*). A hole, formed in the shingle just above high-water mark, generally on a point running out, is its favourite nesting-place.

21. HÆMATOPUS LEUCOPUS, Garnot. (Black and White Oyster-catcher.)

This Oyster-catcher is also common along the sea-coast, laying its eggs in the beginning of October, sometimes on the seashore, but more frequently a little way inland, on a dry, sandy soil. The eggs are two in number, as with the other species; and there is no attempt at a nest.

22. LIMOSA HUDSONICA (Lath.). (Godwit or Jack-Snipe.)

Flocks of this bird were seen at Mare Harbour in the month of May 1860. I shot two of them at Port Louis on the 20th of that month. Both of these birds had the red-barred breast, and this would therefore appear to be their winter-plumage, as those shot in the summer are white on the breast. I have never observed these Godwits during the winter months, and, when they have been here in summer, I have never seen or heard of their eggs being fouud. They are wary, and difficult to obtain by gunshot.

23. NUMENIUS BREVIROSTRIS (Licht.).

This Curlew is a straggler from the coast, of which a specimen has been once obtained by Captain Pack. I have never met with it.

24. GALLINAGO MAGELLANICUS (King). (Snipe.)

This Snipe generally appears in East Falkland about the middle of August, and lays very soon after arriving; for I have had my dog point at them on the nest on the 1st of September, and I have taken two eggs on that day. In the nests of this bird I have never seen more than two eggs, although I have frequently found them, and I believe two is the complement. In March they mostly take their departure, although a few stragglers remain all the year round. They make their nests under a tuft of grass, of which material also the nest itself is composed.

25. TRINGA BONAPARTII, Schlegel. (Sandpiper.)

This little Sandpiper appears in the summer, and breeds in

East Falkland. I have seen the young ones, though I have never found the nest.

26. Nycticorax gardeni (Jard.). (Night-Heron.)

When I was at Hope Place, in December 1859, I went to see a breeding-place or rookery of these Herons. The places selected for laying were the tufts of grass near a freshwater pond, the whole of one side of which was covered with them. In some of the nests, which were composed of a few coarse sticks, were young ones half-grown; in others, eggs (three in number), some hard sat upon, and some fresh. There could not have been less than a hundred pairs at this spot, and, as they seemed never to have been disturbed, they were very tame. Whether this bird remains with us during the winter I cannot say, never having been in the neighbourhoods which they frequent during that period of the year.

27. Platalea ajaja, Linn.

A specimen of the Spoonbill was shot in a pond near Kidney Cove in July 1860. The bird was in poor condition. I also found the remnants of another specimen in Whalebone Bay in the same year.

28. Fulica chloropoides, King?

A Coot, probably of this species, was shot in Stanley Harbour and brought to me in the latter part of 1859.

29. Chloëphaga magellanica (Gm.). (Upland Goose.)

This Goose is found abundantly everywhere in East Falkland. At Cow Bay, where the grass is short and sweet, Rabbits, Upland Geese, and Jackass Penguins are so plentiful that the place is called "the Farm-yard." The Upland Goose is easily domesticated, and very readily takes to eating corn. It breeds all over the country, as well as on the adjoining islets, and on this point Mr. Darwin seems to have made a mistake, unless the disappearance of the Fox from East Falkland has caused a change in its habits in this respect.

These Geese sometimes lay in the long grass, and at other times in the bushes on the banks of streams. The nest is rudely formed of grass till the laying is completed, when the bottom is lined with down. This is one way of telling whether the eggs are sat upon or not. Owing to the gander generally stationing himself about one hundred yards from where the female is sitting, I used to think it was easy to find the nest; but I have sometimes walked about for nearly an hour before I could come upon the female, who never moves until she is almost trodden upon. A curious peculiarity of this bird is that, when they leave their nest, after laying, they cover it up with straw, and when they leave it after the eggs are sat upon, they cover it up with down. No doubt, in the latter case, this is done to keep the warmth in the eggs, and in the former to prevent their destruction by birds of prey. This peculiarity of covering up the eggs seems to be common to all the geese and ducks of the Falkland Islands.

The Upland Goose lays generally in the first week in October. Sometimes I have found seven, sometimes eight eggs in a nest, the latter number being, I think, the maximum. The young birds nearly acquire their adult plumage the first year, and are only distinguishable by the mottled colour of their feet and their plumage being less bright. In the second year the young birds moult their wing-feathers, and are then found together in large flocks near the sea-coast, where, on being disturbed, they immediately run down to the salt water, being unable to fly in this condition.

30. CHLOËPHAGA RUBIDICEPS, Sclater. (Brent Goose.)

This bird, which is called in East Falkland the "Brent Goose," is not so common as the other varieties, except in some places in the North Camp, where I have seen very large numbers, probably a hundred, but always in pairs. The male is easily distinguished from the female by his larger size. The usual nesting-place of this bird is among dry bushes,—the male bird, while the female is sitting, usually being found on the edge of the nearest water (generally salt), which, however, is frequently not in sight of the nest. The eggs are generally five (sometimes, but rarely, six) in number. The young birds of the first year assimilate in plumage to the adults, except that the speculum of the wing is of a dull black instead of a glossy green. The time of laying of this Goose is the first week in October.

31. **Chloëphaga poliocephala**, G. R. Gray.

This can hardly be called a Falkland-Island bird, although Mr. Gould has included it in his list given in the 'Proceedings of the Zoological Society*.' During the three years I have been in East Falkland I have never seen but three, and these were met with singly, at different times, amongst flocks of the Upland Goose (*C. magellanica*). Probably these birds were stragglers from the coast of Patagonia, where the species is said to be very common.

32. **Bernicla antarctica** (Gm.). (Kelp Goose.)

A very common bird along the coast. Its breeding-time is the same as that of the Upland Goose, and, as the nest is placed a few yards from the shore and quite exposed, I have frequently seen the female sitting from a distance. The male bird is generally also stationed very close by, as is the case with the Upland Goose. The interior of the nest of this bird is covered with down, taken from the female only, as I have ascertained by the colour. The eggs are generally six or seven in number, and are carefully covered over with down when the bird is away at feed.

33. **Cygnus nigricollis** (Gm.). (Black-necked Swan.)

This Swan is found all the year round in East Falkland, but is rather scarce and very wild. In 1859 a number appeared in the River Murrel, and most of them moulted there. A pair of them which were caught did not survive long in captivity. The Black-necked Swan seems to breed principally on the adjacent islands, as I have never heard of more than one nest being found on the mainland. This was on the edge of a pond at Mare Harbour.

34. **Cygnus coscoroba** (Mol.). (White Swan.)

Mare Harbour is the only part of East Falkland where I have even seen or heard of this bird. At this spot there is generally a flock of eight or ten to be found. I have never seen the nest; but on the 1st of May, 1860, three young ones about a month old were observed, which, no doubt, had been bred on some of the adjacent islands.

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* Proc. Zool. Soc. 1859, p. 96.

35. Mareca chiloensis (King). (Wigeon.)

This is one of the wildest and scarcest birds in East Falkland. I have never found its nest; but it must breed late in the season, for young ones were seen in a pond near Port Louis in January. On being disturbed, the mother took them to the salt water, and the next day they had disappeared. On the 7th of April, I shot some Wigeons on the north shore with imperfect wing-feathers: were these young birds, or were they moulting?

36. Pœcilonetta bahamensis (Linn.).

A straggler from the mainland, of which one specimen has been obtained by Capt. Pack.

37. Dafila urophasianus (Vig.)? (Pintail.)

The Pintail Duck occurs rather sparingly in the interior of the island on the freshwater ponds, where it is resident all the year round. This Duck never utters any sound or note, either when rising or flying in the air—a singular exception to the general custom of the Duck-tribe.

38. Anas cristata (Gm.). (Grey Duck.)

This Duck is very common everywhere, and although sometimes seen in freshwater ponds, generally frequents the vicinity of salt water. The old birds are always found in pairs in the same spot; they live upon shell-fish, and have certain boundaries of water along the coast, upon which they will not allow others of their species to encroach. They breed inland among the grass, and on the edges of ponds, laying five eggs in a beautifully made nest covered with down. The time of laying is the beginning of October, and frequently a month later. The crest on the back of the head of the male is larger than that of the female, but their plumage is otherwise similar.

39. Querquedula creccoïdes. (Teal.)

This Teal is more plentiful in the interior than in the neighbourhood of civilization. It is found in large flocks in some of the freshwater streams. I have taken the nest of this bird as early as the 18th of September, and I have been told that they lay in August. The nest is more difficult to find than that of any other bird that I know of. It is placed in the dry grass in some out-of-the-way valley that no one frequents; and this is the more remarkable, as the birds, when found in a stream or pond, are very tame. The complement of eggs is five.

40. Querquedula versicolor (Vieill.). (Pampas Duck.) This bird is not common in East Falkland, occurring in but few places, but where found is generally seen in numbers. I have never been successful in finding a nest of this Duck, though I have had the young birds brought to me, and have no doubt that it breeds in the island.

41. Querquedula cyanoptera (Vieill.). (Red Teal.) I am quite sure that a person might go out in East Falkland for a month, and not shoot—and even, perhaps, not see—a Red Teal, though at Mare Harbour I once, with a Gaucho, killed seven in one day. The bird is generally very wild, and far from common. I have never found its nest, but I have no doubt it breeds in the island, having seen it in pairs in the summer months.

42. Micropterus cinereus (Gm.). (Loggerhead Duck.) This Duck, which is called the 'Loggerhead' in the Falkland Islands, frequents the salt water. The harbour of Stanley is full of them, as well as every other part of the coast. Like the Grey Duck, each pair has a certain district, where they take up their quarters, diving for shell-fish and whatever the tide throws up, and driving away any other of their species that may come within their bounds. Looking for the Loggerhead's eggs, which are esteemed a great delicacy, is a great amusement to all the boys in Stanley. The way they are found is this:—wherever a male bird is seen by himself on the water during the breeding-season, the female will be found sitting somewhere in a line perpendicular to the shore opposite to him, and generally not very far off. My dog once found seven nests, all with the bird on, in a small grass valley a short way from the beach at Mare Harbour, pointing to them as steadily as he would to a Snipe. On being disturbed, it is quite amusing to see the old bird fluttering away towards the water; for it is quite unable to fly.

This Duck lays from the end of September to the end of November, making its nest either in the long grass or bush of some kind. Seven is the usual number of eggs, though sometimes eight and nine are found. When the bird leaves the nest, she covers it up in the same manner with grass or down (according to whether she has finished laying or not) as I have stated is the case with the Upland Goose.

43. MICROPTERUS PATACHONICUS, King. (Flying Loggerhead.)

The Flying Loggerhead is not uncommon in the Falkland Islands. It breeds in the same places as the Common Loggerhead, but rather frequents the freshwater ponds near the sea, and is a difficult bird to approach from its wariness. I never shot but one example of it; and this I had not an opportunity of comparing with the non-flying species. I observed, however, that it was a much smaller and lighter bird, and that the wings were more developed, although still small for the size of the body. I have seen the Flying Loggerhead take long flights. I once found a nest of this Duck with seven eggs in it. They were hard set. The bird flew out of the nest on my approach, high up in the air. The eggs were of the same size and colour as those of the common species.

44. PODICEPS CALIPAREUS, Less. (White Grebe.)

This Grebe is found only in the interior of East-Falkland Island, on the small inland ponds. It never flies on being shot at; and I have never seen it on the wing, though it must take long flights, as I have seen seven or eight of them in a pond one day, and next day they had all disappeared. I know nothing of their breeding, not having found a nest. I have, however, shot the young birds in their immature plumage.

45. PODICEPS ROLLANDI, Q. et G. (Black-crested Grebe.)

This Grebe is rather common, being found in both fresh and salt water, though more frequent on the freshwater streams. I have often hunted for their nests, but have never been successful in finding one. At Port Louis, in January 1859, I found a pair of Grebes in Fish Creek, and, wanting specimens, I fired at one, which I only succeeded in wounding. It went on to some stones, and on my approach took to the water. As it did so, two small dark objects fell from its back into the water and floated ashore. I found them to be young ones, both of which had been killed by my first shot. I had not observed them previously, or I certainly should not have fired.

46. Podiceps —— ?

I obtained, and sent to England, two specimens of a larger species of Grebe than either of the two former, in 1859. They were shot, I believe, near Fitzroy River, in East-Falkland Island.

47. Aptenodytes pennantii, Gray. (King Penguin.)

The King Penguin is an occasional visitor to the Falkland Islands, its true habitat being further south. I have never known it breed there; but specimens of it are frequently met with amongst the flocks of the Gentoo Penguin (*Pygosceles wagleri*), with which it always seems to associate.

48. Spheniscus magellanicus (Forst.). (Jackass Penguin.)

I have already described the habits of this bird, which is a constant resident in East Falkland, under the name *Aptenodytes demersa* (see 'Ibis,' 1860, p. 336).

49. Pygosceles wagleri, Sclater. (Gentoo Penguin.)

I have also spoken of this Penguin in last year's 'Ibis' (1860, p. 337), as *Eudyptes papua*.

50. Eudyptes chrysolophus, Brandt. (Maccaroni Penguin.)

This Penguin, which I likewise mentioned in my previous communication to 'The Ibis,' is always found in the rookeries of the Rock-hopper (*Eudyptes nigrivestis*), but is by no means common.

51. Eudyptes diadematus, Gould, P. Z. S. 1860, p. 419.

This new species of Penguin, which has been named by Mr. Gould *Eudyptes diadematus,* I singled out of a flock of Rock-hoppers in the beginning of September 1858, at Eagle Point Rookery. This was the only specimen I ever found of the kind.

Capt. Smyley, an old resident in the Falklands, told me it was common in New Georgia, and called by the sailors the 'Tufted Penguin.' It has the largest crest of all the Penguins I have seen.

52. Eudyptes nigrivestis, Gould, P. Z. S. 1860, p. 418. (Rock-hopper.)

In the second volume of 'The Ibis' for 1860, p. 337, I described the habits of this Penguin under the name *Aptenodytes chrysocome*. It now appears, however, that the Rock-hopper of the Falklands is a new species, which has been named by Mr. Gould, from specimens sent home by me, *Eudyptes nigrivestis*.

53. Eudyptes chrysocome (Forst.).

I obtained a single Penguin (which Mr. Gould recognizes as being the true *E. chrysocome*) out of the Rock-hopper rookery in the North Camp in December 1859. It was the only example I ever met with of this variety.

54. Eudyptes antarcticus (Forst.).

A specimen of a Penguin, which appears to be *Eudyptes antarcticus*, was brought to me one day, having been found in a bay by itself. It was evidently a stranger. On showing this bird also to Capt. Smyley, he informed me that it was a common species on the islands further south, viz. Staten Land and New Georgia. The example in question is now in Mr. Gould's collection.

55. Pelecanoïdes berardi (Q. et G.).

This bird is not common, the only place I have seen it being Berkeley Sound. It is said to breed there, in holes along the shores of the adjacent islands.

56. Thalassidroma nereis (Q. et G.).

I picked up a Petrel (dead) in March 1858, which proved to be of this species.

57. Thalassidroma —— ?

A nearly black species of Petrel, much resembling the Common Storm-Petrel (*Thalassidroma wilsoni*), also occurs in the Falkland Islands, and, I believe, breeds there. It is said to be always found on Long Island, in Berkeley Sound, and I have likewise seen several specimens picked up dead on the shores of East Falkland.

58. Procellaria gigantea. (Stinkard.)

This large Petrel is common along the shores of East Falkland, being generally seen on the wing, though I have occasionally observed them settled on the water. It breeds on many of the adjacent islets, and I have had many of their eggs brought to me.

59. Diomedea melanophrys, Temm.: Gould, B. Austr. vii pl. 43. (Molly-mawk.)

This Albatros is very seldom seen in East Falkland, but breeds in large numbers in the adjacent islands. The nests are described as being raised of mud to nearly a foot high from the ground, and are placed together in large communities. The eggs are two in number, and the birds very difficult to disturb from their nests, suffering the eggs, which are collected in large numbers and brought to Stanley for sale, to be almost taken from under them before moving. The eggs have been described by Mr. Gould from my specimens*.

60. Lestris antarctica (Less.). (Skua Gull.)

This Skua is a summer visitant, breeding in the beginning of December in communities, which are generally stationed near a Penguin rookery. They are always flying backwards and forwards, on the look-out to seize the Penguins' eggs. They make a kind of rude nest of a few sticks, and lay three eggs. In robbing these birds'-nests I always held a stick over my head, for they pounce upon one from so many directions at once, that it is necessary to guard one's eyes. The young birds are covered with a down of a yellowish colour.

61. Larus dominicanus. (Saddle-backed Gull.)

This Gull is a common resident, though I am inclined to think that many of them leave in the winter. In the beginning of December they commence breeding in large flocks, laying two eggs near the beach, or on a small island, without much attempt at a nest. The plumage of the young bird is grey, and continues so until the second year. In September these birds appear in large numbers, many of them immature. During the winter I have observed few, and these all old birds.

62. Larus scoresbii, Trail. (Red-billed Gull.)

This Gull breeds in December, frequently laying its two eggs in the communities of *Larus dominicanus*, but it has also separate breeding-places. The egg is exactly like that of *Larus dominicanus*, only smaller. The young birds have a dark hood, which led me at one time to think that they belonged to different species.

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* Proc. Zool. Soc. 1859, p. 98.

63. Larus roseiventris (Gould). (Pink-breasted Gull.)

This Gull is migratory, arriving in East-Falkland Harbour about July 25th, almost to a day, though occasional stragglers occur all the year round. It breeds in the beginning of December in separate communities on a point of the coast or adjacent island. The nests are placed very thickly together, and each contains two, or sometimes three eggs.

I was once inclined to think the white-headed bird in the plumage originally described by Mr. Gould as *Gavia roseiventris* was of a different species, but I have now altered my opinion, and consider it to be merely the young of the Pink-breasted Gull in the first year's plumage.

On the 24th of May I shot a Pink-breasted Gull, with a white head clouded with dusky, at Port Louis. The plumage of this bird was very perfect. On the 7th of July, however, I shot one of the same species; the body plumage was perfect, but the head feathers were in a state of transition from white to black. Most of the black feathers being in the quill, and the specimen being imperfect, I did not preserve it.

64. Sterna cassinii, Sclater. (Tern.)

The Tern arrives in East Falkland at the end of July, very shortly after the Pink-breasted Gull. It breeds in communities on the sea-beach, but also occasionally inland, in pairs, laying two (sometimes three) eggs in each nest. It disappears about the end of March.

65. Phalacrocorax carunculatus (Gm.). (King-Shag.)

This Shag is common along the coast of the Falkland Islands all the year round. It breeds in the rookeries of the Rock-hopper Penguin (*Eudyptes nigrivestis*), as I have already mentioned in this Journal (Ibis, 1860, p. 338). The Cormorants' nests are not placed together, but here and there, all over the rookery, amongst the Penguins'. They are composed of sea-weed and mud, and are raised about 4 or 5 inches from the ground. The eggs are three in number, of a dirty white, with a strong tinge of green inside, and are deposited in the middle of November, a few days after the Rock-hoppers'. The young Shags attain their plumage about the same time as the young Rock-hoppers, that is, about the beginning of April. Then they all leave the breeding-ground, and the rookery is deserted until the next season.

66. PHALACROCORAX MAGELLANICUS (Gm.). (Common Shag.)

This Shag is very common along the coasts of the Falklands all the year round. It breeds on the cliffs in communities, making its nests, of mud and sea-weed, on the ledges of the rocks, and laying three eggs, which do not differ from those of the King-Shag in appearance.

It appears to me probable that the thick limy coating which covers the eggs of this group of birds is given them in order to strengthen the shell. Shags, when disturbed from their nests, frequently, even with this additional protection, break their eggs with their feet, as I have myself witnessed on more occasions than one.

The young of the Common Shag of the first year are uniform dark, nearly black in colouring; whereas the young of the King-Shag attain their adult plumage the first year, before leaving the Penguins' rookeries.

XVI.—*Narrative of an Excursion to the Mountains of the Richmond River, New South Wales, in quest of Prince Albert's Lyre-bird.* By AUGUSTUS A. LEYCESTER*.

IN order to ascertain the habits and economy of *Menura alberti* more correctly than I had hitherto done, towards the end of the month of April 1859, I made preparations for a shooting-campaign in the brushy mountains of the Richmond River. I first installed into my service two of my old favourite aborigines, Billy and Davy. The former was quite a young man, and had not yet taken to himself a wife; the latter was about thirty years of age, and, being of noble family, indulged in the right of two wives, one of whom had two children, and the other none. We agreed to take with us the unencumbered wife (whose name was "Polly") to wait upon us in camp, to fetch wood and water, and to provide fish and vegetables for our repasts. With these articles she supplied us abundantly; and though we seldom returned to camp till sunset, she generally had the fish and yams roasted, the tea made, and a sufficient supply of wood and water provided for the night; and, being of a merry disposition, was usually found on our arrival singing some aboriginal song and beating time on two of her husband's boomerangs as she sat at the same time watching the pots.

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* Communicated to the Editor by John Gould, Esq., F.R.S., for insertion in 'The Ibis.'

The morning of Wednesday, the 20th of April, was appointed for a start from my hut—a spot called by the blacks Durrigan, situated on the bank of Leycester's Creek, a tributary of the Richmond. I was aroused at grey dawn by the tinkling of my horse-bell, and by Davy knocking at the door and calling out at the top of his voice. Having, as he thought, impressed on my mind with his jargon the necessity of making haste, he put the horses in the yard, and came in for his breakfast with his two 'gins' and Billy. This being accomplished, I saddled Flour-boy, and packed Charcoal (our two horses) with about 2 cwt. of sundries, in the shape of tea, sugar, flour, tobacco, ammunition, blankets, a tent, and my apparatus for preserving skins, and other articles. Davy packed his wife at the same time with his own property, consisting of various "notions" too numerous to mention. Which of the two had the greatest load, my pack-horse or his 'gin,' would be difficult to say, but the latter bore it all cheerfully, and carried it without a word till the end of the day. Davy and Billy, taking each a double-barrelled gun, a dirk-knife, and a tomahawk, started first to kill game on the road, in order to have a supply of meat for dinner and supper, as we did not take any with us. Polly followed next with her load. Having passed over ten miles of a very rough country, about mid-day we halted to get some dinner on a beautiful little streamlet covered over with a canopy of the choicest Creepers, which dipped in festoons into the rushing stream below. The rivulet meandered down the Durrigan Valley, its murmurs blending with the cooing of Doves, the screeching of Parrots, the croaking of Frogs, and the shrill cry of the *Cicada*. This was one of Nature's wildest bowers. Here Polly cast off her load (knowing it to be a mid-day camping ground) and commenced kindling a fire in her own way, disdaining any help. Billy and Davy soon came up, and set to work picking three Brush-turkeys (*Talegalla lathami*) which they had shot on the way and preparing them for the spit. I employed myself in unpacking the horses and giving them water at the brook, having first to cut a road to it through the vines with my tomahawk. The horses having drunk stood by and looked on at us, there being no grass or anything they could eat. On turning round to see if the fire was in good order for roasting, I found Polly (the gin) had got a large Carpet-snake about nine feet long, curled up and in process of being cooked on a small fire she had made for herself. This snake she had killed on the road, and had packed it away in her "dillybag" without saying a word to any one, considering it her own private property. She had taken several large lumps out of the inside of the reptile, which was full of fat, and had laid them aside for the purpose of beautifying her delicate person. This operation she performed after dinner, heating the fat on the embers, and mixing it up in her hands with some powdered charcoal and a little saliva. With this composition she polished herself all over from head to foot, having first divested herself of her garments. These consisted merely of a short kilt made of the tails of opossums and squirrels, which formed a neat fringe; and when the polish (which was equal to any of Day and Martin's best) was finished, she looked quite charming. But to return to the dinner: Polly went to work at the snake and despatched several coils of it, together with a lump of "damper" and a quart of tea, which satisfied her. She then began at her polish, which being completed, she smoked her pipe and fell asleep. Billy and Davy, having put away a turkey each, together with damper and tea, smoked their pipes and went to sleep also.

It took me much longer to prepare and despatch my dinner, being rather more particular in my arrangements, and having to go to the stream to wash my turkey after having drawn and picked it—an operation considered by the blacks a wilful waste of the savoury parts of any game. The natives never make use of water for culinary purposes of any kind; nor do they employ it in their toilet, but use instead the aforesaid mixture of charcoal and grease. This is generally the work of the evening, when they assist one another in polishing. When this is completed they shine like a glass, and consider themselves dressed for their "opera," which consists of music, dancing, singing, and acting of various kinds.

Having finished dinner, I ring the horse-bell as a signal to be moving. The blacks jump up and shoulder their guns, and start off with the dog in search of game. Polly packs herself and starts, not waiting for me, and anxious to get her journey over. I saddle and pack the horses and follow, first looking round the camp to see if any knives, pipes, or tomahawks are left behind. I start the pack-horse first: he knows the way and gives me no trouble, but does his best to get over the rugged road, knowing that plenty of grass is before him at the next camp. The road being very rocky and precipitous renders it impossible to go faster than a walk. About half an hour after leaving camp, I overtook the gin having a "spell" halfway up a steep ridge. Here I was also obliged to take a spell, and give the horses wind. After a few minutes we started again, and in about half an hour reached the top of the ridge, which was pretty high. Through a glade in the brush we saw at a distance Bald Hill, where our next camp was to be.

This spot was an old camping-ground of mine (called by the blacks "Byangully"), and replete with every comfort a bush-camp in Australia can afford—that of grass, water, and game in abundance and of the best kind. It was a small prairie* on a bold hill, surrounded by a dense brush, twenty miles distant from the open country we had left behind. Whilst looking at our home that was to be for the night (distant about six miles), we suddenly heard a great shouting in a deep ravine about a mile below us. Polly thereupon became much frightened, and said the Tabbo blacks had come, and that they would murder her (Billy and Davy being at war with her tribe for stealing a young gin from them about two moons since). More shouting and two shots were heard, and then a general shout and two more shots. Polly upon this threw down her load, and commenced howling and beating her head with a stone till the blood ran down her face. More shots were fired, and then a single shout, upon which Polly brightened up, and said that that was Davy's shout, and that he had succeeded in driving his enemies off. We next heard a *wail for the dead*, and Polly struck up a song. I advised her to take up her pack and come on, but she took no notice of me, and continued howling. However, when I rode on, she followed, singing all the time, and so continued for about two miles, when she suddenly screamed out, and, throwing down her pack, rushed up to my horse and seized hold of my stirrup-leather. At the same instant fifteen blacks stood before us and stopped our horses. They all knew me, and I knew some of them. They said they had come to take Davy's gin, and that they would have her. One of the party, more excited than the rest, raised his spear to kill her, but hesitated to throw it for fear of striking my horse. They told me that Davy had shot Wallumbin Charlie dead, and wounded another of their men, and that Billy had nearly killed a third. Two of them then rushed upon Polly to drag her away. I drew my revolver, upon which they let her go, and she came back to me and took hold of my leg. Upon this they left, saying that they would kill Davy and Billy, and all the tribe, when I had done with them shooting, but that they had no wish to offend me, and would wait until I was gone to another country. [All the tribes round knew that I was going to leave the Richmond.]

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* A grassy hill bare of trees is so called in Australia.

This adventure made it late before we reached the Byangully camp. It was nearly dark when we arrived, and we observed at some distance that Davy and Billy were there before us and had made a large fire. When we came to the camp, Davy related the great battle they had fought, saying that they had fallen in with thirty Tabbo blacks, and, on hearing them at some distance off, had charged their guns with ball. [This I had given them in the morning for their protection, knowing the feud that had existed between the tribes for some time previous.] On their approach, Davy had fired and killed Wallumbin (the chief), and Billy had mortally wounded another man; the rest had fled away, some being wounded. Davy and Billy were in great glee at having gained the victory, and having shot plenty of game we had a good supper. The bag consisted of two Brush-turkeys, two Pademeleons (*Halmaturus*), and five Pigeons. Out of these I selected two Wonga-wonga Pigeons (*Leucosarcia picata*) for my portion, and the remainder was appropriated to the men's night's feeding. Having watered and hobbled and bedded the horses, we set to work cooking our suppers. Polly's former fright did not appear to have reduced her appetite. She commenced supper on the remains of the Snake, which she had put by from dinner. This seemed to refresh her appetite and to prepare her for half a Pademeleon which she received from her husband. This was thrown to her over his shoulder, that being the natives' fashion of presenting their wives with anything choice. The natives never allow their wives to cook for them any meat or game, this being business of too great importance; and neither the women nor boys are allowed to touch the "Waukham" or Brush-turkey, there being some mystery attached to it. When supper was over, Davy suggested that all the guns should be loaded with ball cartridge, as he anticipated an attack on our camp during the night from the Tabbo blacks, and that a watch should be kept. Polly was set to keep the first watch till the moon rose, which would be about midnight; and Billy and Davy were to take the subsequent portion, that being the most likely time for a rush at us. Polly was ordered to sing a death-song all her watch, as a sure plan of keeping her awake, and as further being supposed to produce the effect of sending the soul of the dead black fellow to the right place, wherever that might be according to their belief. The monotonous tones of her voice and song soon sent me to sleep. Having received orders to wake me when the moon rose, she did so, as well as her husband and Billy. This was soon accomplished, as we all slept round one fire, not having erected my tent. When all were aroused Davy proposed another supper (or rather breakfast), which I agreed to. They then finished off all the game (with the exception of one pigeon which I kept for my breakfast), and in addition two opossums which had been added to the stock since our arrival in camp, having been killed whilst sporting among the branches of a tree close by. Polly and I then went to sleep, whilst Davy and Billy sung, and refreshed themselves with game and tea till morning, without an attack having been made. The dog, however, rushed out once during the morning watch and got hold of a native Dingo, which he held until Davy with his "nulla nulla" despatched him. The tail of the dog being considered a trophy, it was not long before Davy had it off and skinned and tied it round his head. This acted as a band to keep his hair up, and added at the same time to his formidable appearance.

Morning came, and with it a beautiful day, for the sun shone on the Bald Hill with all its glory; and the horses were feeding within sight of the camp, close to a little spring that gushed out of a small basin in the side of the hill. Breakfast being over we again prepared for the road, having only ten miles to do this day; but it was a severe ten miles, the ranges being steeper than the day before.

We expected to reach our camping-ground on the top of the Tanning Mountain by mid-day, but did not do so till past 2 P.M. The mountain had a table top covered with fine grass and studded over with a beautiful species of Palm-tree, called by the aborigines "Tanning." Its sides were covered with a dense brush, containing Cedars of gigantic size. Here we formed our permanent camp for our attack on the Calwin, or *Menura alberti*, close to a little torrent of water which ran down a rocky ravine on the west side of the mountain and lost itself in the dense jungle below. Having hobbled and bedded the horses, and stopped up the track by which we came up, to prevent them from straying homewards, we despatched Billy for a supply of game, and spent the remainder of the day in completing our camp. Davy made for himself a bark "gungah," and as it had the appearance of rain, we built a bark shed over our kitchen fire. By the time we had completed our arrangements Billy returned with a supply of game, consisting of three Brush-turkeys, a Pademeleon, and two pigeons, being an ample supply for supper and the morrow's breakfast. Before sunset we rejoiced to hear the cry of three Menuras in different directions, which proved to us that we were in the right spot for the destruction of these most beautiful and curious birds. But to obtain their eggs and nest was the principal inducement to me for taking so much trouble, and it was only after nearly two months' hunting that I was rewarded by finding them. Day after day passed away, and we could only discover two old nests and another being built. The male bird belonging to the latter we shot, not being aware at the time of the nest being close by. After having been out nearly six weeks, I began to despair of ever finding the eggs; but about a week before my excursion must terminate (as I had business to attend to in Sydney), having been out all day, and returning to camp with Davy hungry and wet through, Davy suddenly cried out, and invited my attention to a hen of the Menura flying off from her nest. Davy made a rush to get up to it, but fell back, being in too great a hurry. The difficulty was how to reach the nest, it being situated on a ledge of a projecting rock thirty feet above us; but Davy, taking it coolly, managed with great skill to get up within twelve feet of it. He then directed me to cut him a pole fifteen feet long, which I did, and handed it up to him. The foot of this he stationed on the ledge he was standing upon, and having placed the other end against the rock where the nest was, in less than a minute was up to the nest, and to our great delight pulled out an egg. I directed him to replace it and come down, as I wanted to find out whether any more would be laid, and we then returned to camp, much delighted with our day's work. Having shot plenty of game, we had a good supper. Davy received a new blanket, a pound of tobacco, and a bottle of grog (which was the reward promised to whoever discovered the egg first), and was in high glee all the evening. On the third day after this discovery we returned to the nest. The hen was on it, and I shot her as she flew off. Davy ascended as before. There was still only one egg, which he lowered down in a small bag, making use of his opossum belt which he wore round his waist as a string to let it down. A short time afterwards the dog found the male bird and treed him, upon which Davy shot him.

On blowing the egg, I found that it had been sat upon about a week. The old birds I stuffed, together with many others, which are now on their way to England along with the egg*. We remained a few days longer at the camp, and then returned to

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* This egg is now in Mr. Gould's collection, and will be figured, along with that of *Menura superba* (which it greatly resembles), in his forthcoming work on the Oology of Australia.—Ed.

Durrigan, from which place shortly afterwards I left for Sydney. I made the blacks a present of all the stores, which amounted to a considerable quantity of flour, tea, sugar, tobacco, pumpkins, and old clothes, and ordered a new gown to be made for Polly (Davy's gin). This she wore on the day of my leaving, making in some measure a better appearance than in her native polish of snakes'-fat and charcoal.

The following is a short summary of the result of my investigations into the habits of *Menura alberti*.

This bird has been hitherto found only on the Richmond and Tweed Rivers, in the dense brushes which clothe the mountains in those districts. It is most remarkable that, although similar mountains and brushes exist on the rivers both to the north and to the south of the Richmond and Tweed, this *Menura* is not to be found in them. The range of the species appears to be limited to a patch of country not wider than eighty by sixty miles; for though I have not been able to prove this fact myself, for want of time, yet I fancy the information which I have obtained is pretty correct, coming, as it does, from sawyers and blacks who are frequently travelling from one river to another.

The habits of *Menura alberti* are very similar to those of *M. superba*, as described by Mr. Gould. Having seen and watched both of these birds on their playgrounds, I find the *M. alberti* far superior in its powers of mocking and imitating the cries and songs of others of the feathered race to the *M. superba*; and its own peculiar cry or song is different, being of a much louder and fuller tone. I once listened to one of these birds that had taken up its quarters within 200 yards of a sawyer's hut, and had made himself perfect with all the noises of the sawyer's homestead. He imitated the crowing of the cocks, the cackling of the hens, and the barking and howling of the dogs, and even the painful screeching of sharpening or filing the saw. I shot him in the act of crowing. I have heard some persons say that the *Menura* is polygamous, but I never saw more than a pair together. The cock bird commences to sing at the first dawn of day. Each of them appears to have its walk or boundary, never infringing on another's ground. I have heard them day after day in the same spots, seldom nearer than a quarter of a mile from each other. Whilst singing, they spread their tails over their heads like a peacock, and droop their wings to the ground, at the same time scratching and pecking up the earth. They sing in the morning and evening, and more so in winter than at any other season. The young cocks do not sing until they get their full tails. This, I fancy, takes place in the fourth year, as I have shot them in full feather with the tail in four different stages, the two centre curved feathers being the last to make their appearance. They live entirely upon small insects, principally beetles, and partake largely of sand, which accounts for their preferring sandy localities. Their flesh is not eatable, being dark, dry and tough, and quite unlike that of other birds. They breed in mid-winter, commencing to build their nests in May, laying in June, and having young in July. The nest is generally placed on the side of some steep rock where there is sufficient room to form a lodgement, so that no animals or vermin can approach it. It is constructed of small sticks, interwoven with moss and fibres of roots. The inside is lined with the skeleton leaf of a parasitical tree-fern, which resembles horse-hair. The nest is covered over, having the entrance on the side. Only one egg is laid, of a very dark colour, appearing as if it had been blotched over with ink. The young bird for the first month is covered with a white down, and remains in the nest about six weeks before it takes its departure. It is four years before it arrives at maturity. The native name for this *Menura* is "Calwin."

Singleton, Dec. 9, 1859.

XVII.—*Notice of the occurrence of the American Meadow-Starling* (Sturnella ludoviciana) *in England.* By Philip Lutley Sclater.

A short time ago, the Rev. Henry Temple Frere, of Burston Rectory, near Diss in Norfolk, forwarded for my inspection a specimen of the Meadow-Starling of North America (*Sturnella ludoviciana*), stated to have been killed in this country in the course of last year. Its plumage was in fine condition, and did not show the slightest traces of the bird having been in captivity. Indeed, though living examples of this species have been occasionally brought to this country, the Meadow-Starling is certainly not an ordinary cage-bird. I may mention that the aviaries of the Zoological Society of London do not at present contain a specimen of it.

Being convinced, therefore, that, if the bird had really been killed in England, it might be regarded as a fresh addition to the already numerous list of "accidental visitors" to these shores from the New World, I requested Mr. Frere kindly to ascertain all the particulars he could respecting the time and place of its occurrence. In reply, Mr. Frere informed me that the specimen in question was killed in March 1860 by Robert Baker, servant to the Rev. T. L. French. It was shot close to the railroad in a rough meadow at Thrandeston in Suffolk. At this time it was picking about among the knots of earth, and would not allow Baker to approach within thirty yards. Mr. Frere also told me that he had good grounds for supposing that this was not the only instance in which this species had been observed in England, his brother-in-law, Captain Jary, having on several occasions watched for some time a bird of similar appearance at Walsham in Norfolk in October 1854. Captain Jary, who, though not a scientific ornithologist, has a very good knowledge of English birds, in answer to inquiries on this subject writes as follows:—"Having referred to *Sturnella ludoviciana* in Audubon's plates, I am quite sure it is the bird that I saw at Walsham in the month of October 1854. I have it in my diary. I thought, when I first saw it, that it might be a Golden Oriole. The first time I observed it was in front of the house, near a plantation. I had no gun with me, or could have shot it. I watched it for some time on the soft ground, but heard no note. I saw it again next day in a field among some Larks; it flew away with a quick and hurried flight. Two days afterwards I saw it a third time; but I could not get a shot at it, as it flew away when I was about seventy yards off." After a subsequent examination of Mr. Frere's specimen, Captain Jary repeated his conviction of the bird observed by him having been of the same species.

The American Meadow-Starling is a well-known bird in the United States of America and Canada, where it commonly goes by the name of the Meadow-Lark, from the strong resemblance of its habits and flight to the members of the genus *Alauda*. It has, however, in reality nothing to do with the Lark-family, being strictly a member of the American *Icteridæ*, or Hang-nests. This group takes the place of the Starlings in the New World, and is closely allied to them in structure; but, besides other differences, its members have only nine primaries in the wing, whereas in the Starlings (*Sturnidæ*) of the Old World the tenth outer primary is always present. In their elaborate nest-weaving habits the *Icteridæ* show much resemblance to the Weavers (*Ploceidæ*) of Africa and India, and in some of them (such as *Dolichonyx*) the general conformation is not very different.

The genus *Sturnella* is an aberrant form amongst the *Icteridæ*, its structure being modified to suit it to terrestrial habits, whereas the more typical members of the family are eminently arboreal. Accurate accounts of the present well-known species having been given by Wilson, Audubon, Baird *, and other American ornithologists, whose writings are easy of access, it will not be necessary to repeat them here. But it may not be out of place to add a few lines on the geographical distribution of this bird and its local varieties in the New World.

The *Sturnella*, if we embrace under this name a series of forms nearly, if not quite, identical in structure, but slightly differing in dimensions and in plumage, occupies the whole continent of America from about the 50th parallel of north latitude † to the Savannahs of Venezuela in the southern portion of the New World, but presents certain variations in specimens brought from different localities, to which we may do well to attach different names, whether we regard them as species or as local varieties.

1. *Sturnella ludoviciana* is the bird of the eastern parts of

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* See Wilson's American Ornithology, vol. iii. p. 20. pl. 19. fig. 2 (where the bird is called *Alauda magna*): Jardine's edition of Wilson (1832), vol. i. p. 311: Audubon's Ornithological Biography, ii. p. 216, and v. p. 492 (*Sturnus ludovicianus*): Audubon's Synopsis of the Birds of North America, p. 148; Birds of America, pl. 136: Baird's Birds of North America, p. 535.

† It is a migratory species on the Saskatchewan, arriving about May 1st. See Richardson's Fauna Bor.-Amer. ii. p. 282.

North America, extending over the whole Atlantic watershed of the continent, to the high central plains. With this form, as might have been expected, the specimen killed in England agrees, and it is the bird noticed in the various references given in the note above.

2. *Sturnella neglecta*, Aud. (Baird, B. N. Amer. p. 537), replaces the Eastern form in Western America from the high central plains to the Pacific. Prof. Baird confesses that this bird, though decidedly paler in colouring, is so closely related to *S. ludoviciana* as to render it very difficult to distinguish the skins; but all observers of the two living birds declare that there is a remarkable difference in their notes.

3. *Sturnella hippocrepis* is a name founded by Wagler ('Isis,' 1832, p. 281) upon examples of the *Sturnella* brought from Cuba. I have no very reliable Cuban specimens for comparison; but Mr. Lawrence, in "Notes on Cuban Birds," read before the Lyceum of Natural History of New York, May 21st, 1860, has pointed out its differences from *Sturnella ludoviciana*, which consist chiefly in its narrow pectoral band and smaller size.

4. *Sturnella mexicana* is the name I propose to apply to the Southern Mexican bird, which has the throat-band always quite narrow, and is in dimensions invariably much inferior to Northern specimens. M. de Oca's birds collected at Jalapa, M. Sallé's at Cordova (P. Z. S. 1855, p. 301), and M. Botteri's from Orizaba, are all referable to this variety, which I have hitherto called "*S. hippocrepis*?" Mr. Salvin's specimens from Guatemala (cf. 'Ibis,' 1859, p. 19) also belong here.

5. *Sturnella meridionalis* may be the term applied to the New Granadian and Venezuelan variety of this widely diffused bird. It agrees with *S. mexicana* in the form of the neck-gorget, but is nearly of the size of the *S. ludoviciana*, and has the bill even longer.

In concluding this summary notice of the geographical range of *Sturnella ludoviciana* and its allies, I may remark that there seems to be so much variation in specimens of this bird brought even from the same districts, that I cannot deny that much fuller evidence is necessary before we can consider these different forms (though eminently worthy of study and of record) as entitled to the same rank in a natural arrangement as well-established species.

XVIII.—*Ornithological Notes from Mauritius.* By EDWARD NEWTON, M.A., C.M.Z.S. No. I. *A Visit to Round Island.*

ROUND ISLAND lies about twenty-five or thirty miles north-east of Mauritius, and is about a mile and a half long by a mile wide. The land rises at once from the sea to about the height of a thousand feet, and is consequently very steep. Here the Red-tailed Tropic-bird (*Phaëton rubricauda*, Bodd.) breeds in very large numbers. They are the tamest birds I ever saw, and do not know what fear is. They never attempt to leave their single egg or nestling at one's approach, but merely stick out their feathers and scream, pecking at one's legs with their beaks. It is the fashion on the island for visitors to remove the old bird from its egg by a slight shove, and then placing the foot gently on its head, to draw out the long tail-feathers. It resents this insult by screaming and snapping, but never tries to escape by flying or shuffling along the ground; in fact, like all birds which have their legs placed so far behind, they cannot rise off a flat surface, but require a drop of a few feet to give them an impetus. One that had an unusually tight tail I lifted up and held in the air by that appendage, and it flapped in my hand until the feathers gave way, when it flew off, but having left a young one behind, returned almost to my feet in two minutes or so, as if nothing had happened. They do not appear at all particular in the choice of a place to deposit their single egg. They make no nest; but the shelter of an overhanging rock, or the protection of the arched roots of the Vacoa (a species of *Pandanus*), seems preferred. On one occasion I found an old lady asleep on her egg, and she was extremely indignant at being stirred up and having her tail stolen. It is curious that I did not see a single egg without its owner sitting on it, and perhaps one may hence presume that they feed at night. In some places their nests were excessively numerous, their eggs or young occurring every few yards. There were to be found about as many young as eggs, some of the former almost as large as their mothers, and nearly able to fly; but I did not see a single immature bird that had started in life on its own account, though I have no doubt many had already done so. Most of the eggs had been incubated some time; in fact, on blowing fifty or so of them, I hardly think that I found half a dozen fresh, the majority being within a few days of hatching. I was rather short of baskets for carrying eggs, and consequently I did not get as many as I might have done. Certainly I had been told that the eggs might be picked up by the thousand, but I had not believed the statement. This species is much finer and larger than the Yellow-billed one (*P. flavirostris,* Brandt). Of this there were a few about the island; but I did not find a single egg, or see a bird on the ground. When on the wing, the fine rosy colour suffused over the whole under surface of the Red-tailed species comes out very well.

On the north-east of the island, where there is more of a cliff than anywhere else, is a tolerably large colony of Petrels (perhaps the *Puffinus chlororhynchus* of Lesson), called '*Fous*'—dark-brown birds about the size of *Puffinus anglorum,* with yellowish-white legs and feet. I dare say they are spread over the greater part of the island, but there are more at this one spot than any other. They are as tame as the *Pailles-en-queue,* but not so harmless. They breed under stones, and bite most awfully if they get a chance. The only way to get them out and take their single egg—for they, too, lay but one—is to contrive to turn them round so that one can grab their folded wings and tail. If dropped on the ground they will run about, and for some time will not try to fly; but if thrown into the air, they will glide down gently towards the sea. On going near any rock where there may be a dozen or two, one bird seems to give the alarm, and a chorus of the most extraordinary sounds immediately proceeds from under ground. I hardly know what to compare it to, as there is nothing like it except, perhaps, the noise made by cats when they set up their backs and squall; and though there may not be a thousand, as the imaginative boy in the story averred, yet "father's old Tom and the neighbour's dead 'un" could never make the row these few birds do. It is kept up for a minute or two, and increases when the individuals are hauled out in the manner above described. All the eggs I got (about twenty-five in number) were either fresh or nearly so. There are hardly any other birds in Round Island, and these two are probably the only species that breed there, with the exception of the small Turtle-Dove (*Geopelia striata*, Gray), of which I saw a pair—the only land-birds, indeed, I observed. Between Round Island and Mauritius I saw a few Frigate-birds (*Tachypetes* —— ?), another species of Shearwater (*Procellaria assimilis* of Gould, I think), and a few Noddy Terns (*Anoüs stolidus*, Leach). These latter are said to breed on Serpent Island, about two miles to the northward of Round Island, whence it looks as if covered with a slight snow-shower—an appearance said to be caused by the dung of the birds. It has only been once or twice visited, and we had not time to go there; besides, the landing there is always exceedingly difficult. Round Island for that matter is bad enough, and is only accessible two months in the year. On it there are still the remains of the cave and old stone wall which was built as a shelter by the late Colonel Lloyd when he was there some fifteen or sixteen years ago, and had to stay more than a week on account of a hurricane. The present Acting Surveyor-General, to whom the island belongs, and who accompanied me on my visit, was then one of the party. They were thought by all here to have been lost or starved, and a steamer was sent to their relief; but from the number of empty bottles that are left, they could not have done so badly in the drinking way. We were only away one night, that of November 3, and left again the following day at noon; so we had not much time, and I suppose I shall not be able to get there again for another year.

XIX.—*On the American Barbets* (Capitonidæ).

By Philip Lutley Sclater.

(Plate VI.)

The true Barbets of the tropics of both hemispheres (*Capitonidæ*) have been united by some systematists with the Woodpeckers (*Picidæ*), whilst others have mixed them up with the Fissirostral *Bucconidæ* or Puff-birds—a group which cannot certainly be placed far from the Kingfishers (*Alcedinidæ*). Though I agree with the former authorities in considering the Barbets as true Scansorials, I cannot join with Mr. G. R. Gray in arranging them as a subfamily of the Woodpeckers (*Picidæ*). They appear to me to have every claim to occupy a distinct station, and to be ranged as an independent family near the Toucans (*Ramphastidæ*), to which latter group one of the genera (*Tetragonops*) shows very considerable *rapprochement*.

While the Woodpeckers are spread throughout the New World and over the whole of the Old World, except the Australian region, the Barbets are strictly confined to the tropics of both hemispheres. In Asia, Africa, and America, however, they are represented by different genera; and when their full history and peculiarities are better known, it is not improbable that the Barbets of the eastern and western hemispheres may be separable into two subfamilies. The known genera of the *Capitonidæ*, geographically arranged, are as follows:—

America.	Africa.	Asia.
Capito.	*Pogonorhynchus**.	*Megalæma.*
Tetragonops.	*Gymnobucco.*	*Psilopogon.*
	Barbatula.	*Megalorhynchus.*
	Trachyphonus.	

Of these three regions the Neotropical is the poorest in number of species, though, in brilliancy of colouring and in singularity of form (looking to *Tetragonops*), the South-American Barbets are perhaps the most remarkable of the family.

The Barbets occupy but a limited area in South America compared with many other of its peculiar families. Not one of them has yet been found to the north of the Isthmus of Panama, or south of the basin of the Amazon, and the species are chiefly confined to the countries traversed by the upper branches of this river, and to the mountain-valleys of New Granada, Ecuador, and Peru. We have few details recorded concerning their habits, but they are said to be seen generally in the fruit-trees, feeding on the fruit, and hopping from branch to branch like the Toucans†.

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* This term, proposed by Van der Hoeven in 1833 (Handb. d. Zool. ii. p. 446), has precedence over *Læmodon*, generally adopted for this genus.

† Interesting particulars concerning the habits of the Asiatic *Capitonidæ*

Genus I. TETRAGONOPS.

Tetragonops, Jard. Edinb. N. Phil. Journ. n. s. ii. p. 404 (1859).

Rostro forti, ad basin quadrato, mandibulæ apice bifurcatâ et maxillâ, supra hanc leniter incurvatâ, obtectâ.

TETRAGONOPS RAMPHASTINUS. (Plate VI.)

Tetragonops ramphastinus, Jard. Edinb. N. Phil. Journ. 1855, n. s. ii. p. 404, et iii. p. 92 (cum fig.).

Pileo et nuchâ mediâ cum cervice posticâ atris; nuchâ utrinque laterali candidâ; dorso flavo-olivascenti-brunneo; uropygio olivaceo-flavo; alis caudâque schistaceo-nigris, remigibus extus olivascentibus: gutture late schistaceo, ventre summo olivaceo-flavo, hoc medio et vittâ pectorali coccineis; ventre imo crissoque cum lateribus schistaceo-virentibus: rostro flavo, dimidio apicali schistaceo: long. tota 8·3, alæ 4·0, caudæ 3·25.

Hab. in rep. Æquator.

Mus. Gul. Jardine, Bar.

Sir William Jardine received a specimen of this very curious and beautiful bird in September 1859 from Professor Jameson of Quito, and described it in the 'Edinburgh New Philosophical Journal' for that year, as noticed above. In the following volume some further details were given respecting it, and an uncoloured drawing of it, from the pencil of Mrs. H. E. Strickland. Sir William Jardine having kindly placed the stone with the drawing on it at my disposal, I thought that a coloured figure of this strange bird would be acceptable to the readers of 'The Ibis,' and I have to thank Mrs. Strickland for supplying me with a coloured copy of the plate for a pattern.

Sir William Jardine has since received a second example of this bird from Professor Jameson. I particularly called the attention of Mr. Fraser, when he was in Ecuador, to this bird; but though he visited the exact locality where Professor Jameson's specimens were obtained (Nanegal, on the Pacific slope of the western range of the Andes, as he was informed by Professor Jameson, and not Cayambe), he was unable to procure specimens; so we must suppose the bird to be rare.

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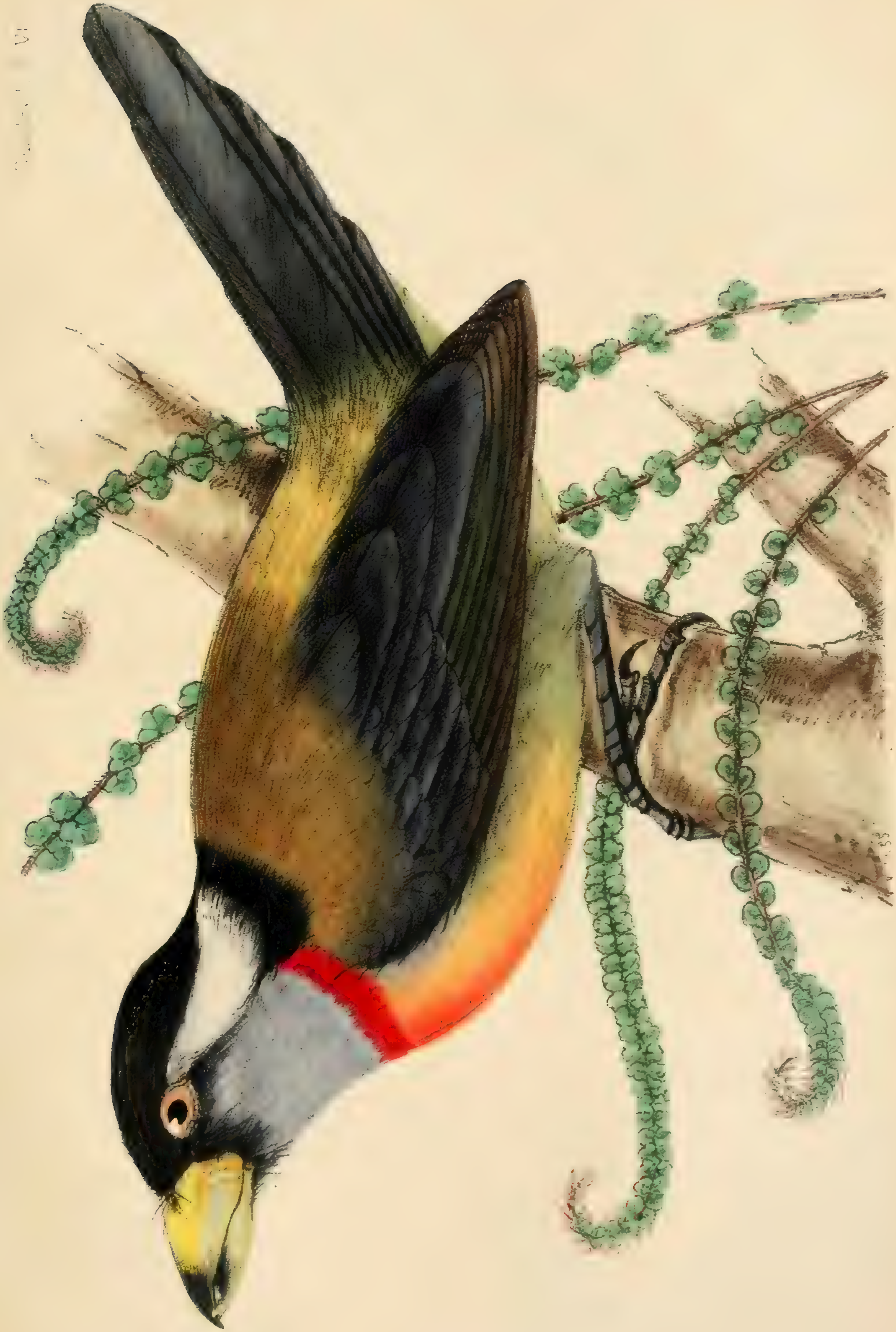
will be found collected in Horsfield and Moore's 'Catalogue of the Birds in the East India Company's Museum' (ii. p. 635 *et seq.*).



The most noticeable points about the *Tetragonops* are the singular conformation of the bill (the lower mandible being distinctly bifurcated at its extremity, and the point of the upper fitting into the groove thus made), and the abnormal distribution of the colours, which strongly reminds one of some of the Toucans of the genus *Andigena*.

Genus II. CAPITO.

Capito, Vieill. Analyse, p. 27 (1816).

Micropogon, Temm. Tabl. Méth. d. Pl. Col. p. 55 (1838).

Nyctactes, Gloger, Obs. s. noms d'Ois. (1827).

Rostro compresso, ad basin dilatato, culmine inter nares elevato: mandibulâ subrectâ, apice acuto; maxillâ incurvâ, apice ultra mandibulam breviter protenso.

Sectio a. *Capito.*

Majores: robustiores.

1. CAPITO ERYTHROCEPHALUS.

Barbu de Cayenne, Buff. Pl. Enl. 206. fig. 1, unde *Bucco erythrocephalus,* Bodd., et *B. cayennensis,* Gm. S. N. i. p. 405: *Micropogon cayennensis,* Temm.: *Capito erythrocephalus,* Gray, Gen. ii. p. 430 (adult.).

Barbu de S. Domingue, Buff. Pl. Enl. 206. fig. 2, unde *Bucco cayennensis,* var., Gm. S. N. i. p. 405: *Micropogon nævius,* Temm.: *Capito nævius,* Gray, Gen. ii. p. 430 (juv.).

Capito cayennensis, Schomb. Guian. iii. p. 720: *Le Barbu de la Guyane,* Le Vail. Ois. de Par. ii. pls. 23, 24, 25.

Niger, sulphureo variegatus: alis et caudâ fuscis, extus virescentibus: pileo flavicante, fronte lato et gutture rubro-coccineis: abdomine pallide sulphureo: lateribus nigro obsolete maculatis: pectore et lateribus totis in juvene nigro distincte guttatis: long. tota 6·5, alæ 3·1, caudæ 2·0.

Hab. Guiana.

Mus. Brit., P.L.S.

There is no doubt now, we believe, that the *Capito nævius* is merely the young of *Capito erythrocephalus,* and that the spots gradually disappear, in the manner pointed out by MM. Deville and Des Murs in their article upon the following species, leaving the abdomen pure and unspotted in the adult bird.

2. CAPITO AMAZONICUS.

Micropogon amazonicus, Deville et Des Murs, Rev. et Mag. de Zool. 1849, p. 174; Des Murs, Zool. Voy. Casteln. Ois. p. 28. pl. 3. fig. 2.

Similis *Capitoni peruviano,* sed gutture rubro: long. tota 5·3, alæ 2·3, caudæ 2·1.

Hab. Ega and Santa Maria, Upper Amazon (*Deville*).
Mus. Brit.

MM. Deville and Des Murs describe this bird as forming an intermediate variety between *C. erythrocephalus* and *C. peruvianus.* A skin in the British Museum, which seems to be referable to it, was obtained by Mr. Wallace at Ega, and is marked: "Iris orange; tongue cartilaginous, flat, not fringed: in stomach seeds." It resembles *Capito peruvianus* except in its red throat, in which respect it is clearly intermediate between *C. erythrocephalus* and its Amazonian representative.

3. CAPITO PERUVIANUS.

Le Barbu orangé de Pérou, Le Vail. Ois. de Par. ii. pl. 27. p. 63.

Bucco peruvianus, Cuv. Règne An. (1829) i. p. 458.

Capito peruvianus, Gray's Gen. ii. p. 430; Deville et Des Murs, Rev. et Mag. de Zool. 1849, p. 161.

Capito punctatus, Less. Tr. d'Orn. p. 65; Gray's Gen. ii. p. 430; Des Murs, Icon. Orn. pl. 20.

Capito aurifrons, Vig. Proc. Zool. Soc. 1832, p. 3; Gray's Gen. ii. p. 430.

Eubucco aurifrons, Bp. Consp. p. 142.

Micropogon flavicollis, Bp. Proc. Zool. Soc. 1837, p. 120.

Capito flavicollis, Gray's Gen. ii. p. 430.

Micropogon aureus, Temm. Pl. Col. (sub tab. 490).

Le Barbu de la Guyane, ii. var., Le Vail. Ois. de Par. pl. 26. p. 62.

Niger, sulphureo variegatus, pileo toto virescenti-sulphureo: gutture aurantio: abdomine flavo: pectore et lateribus in juvene nigro squamatis et guttatis: long. tota 7·0, alæ 3·5, caudæ 2·2.

Hab. Interior of New Granada; Rio Napo; Upper branches of the Amazon; Rio Javarri (*Bates*); Chamicurros (*Hawxwell*).
Mus. Brit., P.L.S.

This species is easily distinguished from its representative in

Cayenne by the want of the bright-red front, and the throat being orange instead of red. The younger birds are more or less spotted below, as in *Capito erythrocephalus,* and have been described as different, under the name of *Capito punctatus.* The irides, as noted by Mr. Hawxwell, are *red.*

4. CAPITO AUROVIRENS.

Le Barbu oranvert, Le Vail. Prom. Suppl. pl. E.

Bucco aurovirens, Cuv. Règn. An. (1829) i. p. 458.

Micropogon aurovirens, Bp. Proc. Zool. Soc. 1837, p. 120; Bp. Consp. p. 142.

Capito aurovirens, Gray's Gen. ii. p. 430.

♂ virescenti-fuscus: pectore late aureo: mento albescente: pileo coccineo: long. tota 7·5, alæ 3·4, caudæ 2·5.

♀ pileo concolore: mento albescente.

Hab. Peruvian Amazon, Sarayacu on the Ucayali (*Cast. et Deville, Hawxwell*); Rio Napo.

Mus. Brit.

Examples of this beautiful species obtained by Mr. Hawxwell on the Ucayali, now in the British Museum, are marked "Irides red." Specimens have likewise been received by Sir William Jardine from the Rio Napo, through Professor Jameson.

Sectio b. *Eubucco.*

Minores: coloribus lætioribus.

5. CAPITO PICTUS.

Barbu de Maynas, Buff. Pl. Enl. 330, unde *Bucco pictus,* Bodd. Tabl. d. Pl. Enl.

Capito maynanensis, Gray's Gen. ii. p. 430, ex Brisson.

Bucco elegans, Gm. S. N. i. p. 406.

Le Barbu élégant, Le Vail. Ois. de Par. ii. pl. 34. p. 76.

Eubucco pictus, Sclat. P. Z. S. 1857, p. 268.

Viridis: pileo et gutture medio coccineis: mystacibus latis et torque angusto cervicali undique glauco-cæruleis: pectore flavo: ventre flavo viridique flammulato, maculâ magnâ mediali sanguineâ: rostro flavo, basi plumbeâ: pedibus nigris: long. totâ 6·0, alæ 2·6, caudæ 2·0.

Hab. Bolivia (?).

Mus. Derbiano.

The only example I have ever seen of this Barbet is in the

Derby Museum at Liverpool. It was purchased from Mr. Cuming by the late Lord Derby in 1846, and is labelled "Bolivia;" but the skin has every appearance of being of the Bogotan make. This species may be easily distinguished from the following, with which it has been sometimes confounded, by the broad blue moustaches which descend on each side of the throat, and are united below the red chin by a narrow blue throat-band. In *Capito tschudii*, the sides of the face between the head and the throat are yellow.

6. CAPITO TSCHUDII.

Capito erythrocephalus, Tsch. F. P. p. 260 (nec Bodd.).

Eubucco erythrocephalus, Sclat. P. Z. S. 1857, p. 268.

Viridis: nuchâ griseo-cæruleâ: pileo et oculorum ambitu coccineis: subtus flavus, gutture et pectore medio coccineis: margine subgutturali cæruleo, deinde aurantiaco: lateribus et crisso viridi flammulatis: crass. spec. præc.

Hab. Eastern Peru (*Tschudi*).

Mus. Bremensi et Novo-Castellano.

My characters are taken from a specimen in the Bremen collection received direct from Tschudi.

7. CAPITO BOURCIERI.

Micropogon bourcieri, Lafr. R. Z. 1845, p. 179, et Rev. et Mag. de Zool. 1849, p. 116. pl. 3.

Capito bourcieri, Gray's Gen. ii. p. 430.

Eubucco bourcieri, Bp. Consp. p. 142; Sclater, P. Z. S. 1854, p. 115, 1857, p. 267, et 1860, pp. 95, 297.

Viridis: vittâ nuchali angustâ cærulescenti-griseâ: capite toto et gutture ad medium pectus coccineis: loris et mento nigris: ventre medio sulphurascente, lateribus flavo viridique flammulatis: rostro plumbeo, apice flavâ: pedibus nigris: long. tota 5·5, alæ 3·2, caudæ 1·9.

Hab. Interior of New Granada; Rio Napo; Esmeraldas and Nanegal (*Fraser*).

Mus. Brit., P.L.S.

This bird was originally received in collections from Bogota. Examples of it were likewise contained in Mr. Gould's collection from the Ecuadorian province of Quixos on the Rio Napo, of which I gave a list in Proc. Zool. Soc. for 1854 (p. 109). Mr. Fraser has more recently obtained specimens of it, of slightly larger dimensions, though apparently not otherwise different, at Esmeraldas and Nanegal, on the opposite side of the Andes.

8. CAPITO RICHARDSONI.

Capito richardsoni, Gray's Gen. ii. p. 430. pl. 106.

Eubucco richardsoni, Bp. Consp. p. 142; Sclater, P.Z.S. 1857, p. 267.

Capito sulphureus, Eyt. Cont. Orn. 1849, p. 130.

Viridis: vittâ cervicali posticâ cinerascenti-cæruleâ: capite toto cum maculâ mentali saturate sanguineo-coccineis: gutture pallide sulphureo: pectore sanguineo perfuso: ventre flavo viridique flammulato: long. tota 5·5, alæ 2·5, caudæ 1·75.

Hab. Interior of New Granada.

Mus. Brit., P.L.S.

The dark-grey posterior neck-band is an easily distinguishing characteristic of this bird, as compared with the next species.

9. CAPITO AURANTIICOLLIS.

Eubucco aurantiicollis, Sclater, P. Z. S. 1857, p. 267.

Viridis: vittâ cervicali posticâ clare flavicanti-viridi: capite toto et maculâ mentali saturate sanguineo-coccineis: gutture aurantiaco: pectore coccineo: ventre flavo viridique flammulato: long. tota 5·5, alæ 2·7, caudæ 1·8.

Hab. Peruvian Amazon: Rio Javarri (*Bates*): Ucayali (*Hawxwell*).

Mus. Brit., P.L.S.

This species closely resembles the preceding, but may be distinguished by its light greenish-yellow (not grey) posterior neck-band, orange (not yellow) throat, and deeper scarlet breast. Mr. Hawxwell's examples are marked "*Iris red.*"

10. CAPITO HARTLAUBI.

Micropogon hartlaubi, Lafr. R. Z. 1845, p. 180, et Rev. et Mag. de Zool. 1849, p. 176. pl. 6.

Capito hartlaubi, Gray's Gen. ii. p. 430.

Capito capistratus, Eyt. Cont. Orn. 1849, p. 131.

Megalaima capistratus, Eyt. Cont. Orn. 1850, p. 29. pl. 45.

Eubucco hartlaubi, Sclater, P. Z. S. 1854, p. 115, et 1857, p. 268.

Viridis: fronte, loris et mento nigris: frontis margine postico, superciliis et capitis lateribus grisescenti-cæruleis: pileo aurescente : vittâ latâ cervicali anticâ aurantiâ : pectore pallide sulphureo : ventre flavo et viridi flammulato : long. tota 5·0, alæ 2·7, caudæ 1·8.

Hab. Interior of New Granada and Rio Napo.
Mus. Brit., P.L.S.

11. CAPITO MELANOTIS.

"*Eubucco hartlaubi,* ♀ aut juv.," Sclater, P.Z.S. 1857, p. 267.
Capito melanotis, Hartlaub, in Mus. Bremensi.

Viridis : loris et regione auriculari nigris : superciliis post oculum aurescentibus : subtus viridis, gutture grisescente, mento albo : vittâ cervicali anticâ sulphureâ : ventre flavo et viridi flammulato : crass. spec. præc.

Hab. New Granada, Rio Napo, and Peruvian Amazon ; Ucayali (*Hawxwell*) ; Rio Javarri (*Bates*).
Mus. Brit., Bremensi, P.L.S.

I am still not certain as to whether this bird is really distinct from *C. hartlaubi.* It differs from that species in the green cap, which has, however, an aurescent tinge, in the black (not blue) sides of the head, which are bordered behind by a golden post-superciliary mark, and in the yellow (not orange) throat-band. I have not yet met with intermediate forms, and am rather disposed, at present, to agree with Dr. Hartlaub in making it specifically different. I should remark, however, that both Mr. Hawxwell's specimens in the British Museum are marked "female."

12. CAPITO GLAUCOGULARIS.

Capito glaucogularis, Tsch. Av. Consp. in Wiegm. Archiv, 1844, p. 301, et Faun. Per. p. 259. pl. 24. fig. 2.
Eubucco glaucogularis, Sclater, P. Z. S. 1857, p. 268.

Viridis : facie et gutture cæruleis : loris nigris : vittâ anticâ cervicali ruberrimâ : abdomine viridi : ventre flavo et viridi flammulato : crass. spec. præc.

Hab. Eastern Peru (*Tsch.*).
Mus. Bremensi.

XX.—*On the Possibility of taking an Ornithological Census.*

By ALFRED NEWTON, M.A., F.L.S.

To attempt the taking of an Ornithological Census of these islands was a favourite idea of Mr. John Wolley's ; so much so, indeed, that I believe he used to regard its accomplishment as the chief requirement of British ornithology. To this opinion I cannot entirely consent; but I nevertheless think that if some such approximate estimate could be made, it would be extremely advantageous not only to English ornithologists, but to those of foreign countries; and that, if more generally extended to other branches of natural history, it might furnish results of a very valuable, not to say unexpected, character.

Just at this time, when we are on the eve of taking the human census of the British Empire, I think, then, it is not inappropriate to bring a somewhat similar design as regards our Fauna to the notice of naturalists. With this view I am about to communicate to the Linnean Society some remarks bearing upon the question of a general zoological census, while I here propose more especially to call the attention of ornithologists to the particular application of Mr. Wolley's project.

I am not so sanguine as to hope that any immediate steps will ensue from this paper; but if my brother-students will but lend the matter their consideration, perhaps, before the close of the existing generation, we—or, rather, our successors—may be in a position fairly to begin the work. Indeed, beyond stating my conviction that a census of our birds merely can only be taken by the co-operation of nearly all the ornithologists in the country, I am not at present prepared to offer any suggestions as to the method to be employed. But I wish to make a few observations on the subject.

Now as to the probable utility of such a census, to which I imagine many will at the outset demur. It is unnecessary in these days, if it ever was otherwise, to show how much light has been thrown upon natural history by an understanding of the geographical distribution of species. Yet our acquaintance with this extensive field of research is very limited. The six great physical regions of the earth's surface have been defined with more or less accuracy, but the details are far from being filled in. Meritorious efforts have been made to determine the summer range of the Nightingale and the lines of the Crane's simultaneous arrival. The progressive advance of the Republican Swallow in North America, of the Grey Partridge in Scandinavia, and of the House Sparrow in Siberia has been recorded. The respective parallelism which obtains in certain families or genera inhabiting the Greater Antilles has been noticed, and a comparison made between the number of New-World and European species which find their way as stragglers to our shores. But little has been ascertained with respect to the distribution of British birds. However, I know that one of my friends, distinguished by his remarkable diligence, has now for some time been employed on this deeply interesting subject, and as I trust that before long he will have made sufficient progress to offer to the public, in these pages, some of his investigations, I will say no more on this head, but turn to what I conceive will prove to be the most important result of such an inquiry as I have indicated.

Two of the expressions which have lately become very familiar to the ears of naturalists are the "Struggle for Life," and the "Preservation of Favoured Races" therein. Each of these points, as it seems to me, would be greatly elucidated by the carrying-out of Mr. Wolley's idea. Every one must admit our present knowledge respecting them to be very meagre, and I cannot help thinking that before we can assign any cause for the predominance of one species over another, we should strive to ascertain the measure of that predominance. I confess I hardly know yet, which is to be regarded as the dominant species of bird in a small and well-explored country like England. I believe there are many more naturalists who will confess the same. The different local lists that have been published scarcely enable us to form an opinion on the subject, excellent though for other purposes they may be. Seldom do we find in them more definite intelligence concerning a given species than that it is "common" or "rare"—expressions which often refer as much to the individual powers of and opportunities for observation possessed by the compiler, as to the peculiarity of the species; and expressions which must always be vague, if not arbitrary. Still more difficult is it to say why in one part of England a species is abundant or scarce, compared with what it is in another. Of course there are some exceptions to this, which will immediately occur to the reader's mind, as in the case of sea-birds not frequenting the interior, or mountain-birds not inhabiting the level country. But can any one say why, in Devonshire, the unvaried notes of the Chiff-chaff are as commonly heard as the joyous song of the Willow Wren, while, in the parish in which I am writing, the latter bird outnumbers the former by many hundreds to one; or why, again, in some of the northern counties the Wood Warbler is nearly as numerous as the Willow Wren, while here it is not more common than the Chiff-chaff? Of course the ready reply is, "Oh, it is owing to the difference in the habits of the species, and in the character of the locality." But this is really no answer; for immediately I rejoin, what are those differences? and, at present, I have no means of gratifying my curiosity on this point. Nor will, I suspect, a satisfactory answer be found until we have reliable information not only as to the approximate proportion which the species I have named bear to each other in different districts, but also as to the relative abundance of other species which influence their existence. This opens a wide region for inquiry, wherein not only the student of other branches of zoology, but also the botanist and the geologist must help us ornithologists, and accordingly the object of my communication to the Linnean Society is to invite such assistance.

I regret extremely that among Mr. Wolley's papers I can find few memorandums or suggestions bearing on the subject, and yet I know that towards the close of his life it occupied his thoughts not inconsiderably. He first acquainted me with his idea in a letter from Ormöga in Œland, dated June 7, 1856, in which he stated, that at the meeting of Scandinavian naturalists, which he was then about to attend, he should like to "give some account of the British birds, of which so little is known on the Continent beyond the bare list." He wished to begin "by naming the birds which are commonest in England and most characteristic of our bird-fauna;" above all, "to be able to represent by numbers the relative abundance of each species: throughout Great Britain put a Sparrow at 1,000,000, and an Osprey at 1, what will be the intermediate figures?" As may be readily imagined, I was unable to supply him with any facts that he could use, and consequently his design was abandoned, but, as I trust, only to be taken up and completed some day by the numerous ornithologists of this country. However, I had subsequently many opportunities of discussing the matter with him, and the considerations recorded in this essay are among the results of the consequent interchange of ideas between us.

I have already stated my entire ignorance of what is the dominant species of bird in England generally. At first sight one might be almost inclined to suppose, as Mr. Wolley (in the passage I have just quoted) seems to have thought, that the House Sparrow is the most abundant of our birds. There is no question that it is one of the most characteristic; for this is shown as well by a walk through the streets of London as by a ramble in the country. But on inquiry I think it will be found that there are numerous and extensive districts in which its predominance cannot be admitted. Its habits incline it to the vicinity of human civilization. Where it does occur, it of necessity obtains notice. In localities further removed from the haunts of men it is clearly outnumbered by the Sky Lark, the Yellow Hammer, and the Chaffinch, and these localities form the majority. Difficult therefore as it is to strike the balance, I am of opinion that its claims must be disallowed.

After some reflection, I have come to the conclusion that the Grey Partridge in this particular district is the most abundant species we have. I do not now pretend to assign for the fact any causes beyond those which will immediately occur to the reader—the long-continued and systematic destruction of its especial enemies, and its still more ancient protection during the breeding-season by the law of the land. In other counties I well know the fact is otherwise. In parts of Gloucestershire or Monmouthshire, one cannot find in a week as many as may be seen in an afternoon's stroll in this neighbourhood; and yet, as far as human aid goes, Partridges are as carefully preserved there as here.

Still further, I am almost inclined to doubt if, in any extensive district in England, say a county of average size, any species is more numerous than the Grey Partridge is hereabouts. But I own freely that I am writing in comparative ignorance, and it may well be that I am mistaken. Let it therefore merely rest as an assumption, insufficiently supported at present by evidence, for the sake of seeing what further inferences may be drawn from it. It is a pretty general belief among those who have to do with game, that there are few, if any, manors which, one year with another, will yield the gun a bird to the acre; on the other hand, in the majority of cases the proportion will not be anything like as large: so that, admitting the truth of each of these hypotheses, their combination serves to show that in no one species of bird in England do the numbers reach one to an acre; and thus, though on very unsatisfactory grounds, do we obtain a limit in one direction of the ornithological population of this country.

As regards reducing to practice any of the suggestions I have here mooted, I also desire to speak with great diffidence. I may on a future occasion have to detail a method of recording observations, which during some years has been followed by my brother and myself, and which, though not originally begun with any such design as that here advocated, still would undoubtedly furnish means of determining many points in connexion with an ornithological census. It seems to me, however, that materials for attaining the end I seek already exist, as regards at least one species, to a considerable extent. I allude to the "Game Books" which are now so commonly kept on different manors; and I think that nothing but a little ordinary care in applying the results to be obtained from a somewhat general inspection of these useful registers would furnish a sufficiently accurate return as far as relates to the Grey Partridge. No doubt many proprietors might evince a disinclination to submit such valuable records to be examined by a stranger; but much of this might also be overcome by the tact of the ornithological statistician, who could with good reason urge that, by the comparison of local registers of this description, he would from them very possibly supply preservers of game with many deductions of a highly important nature. For from an extended examination of such books, or abstracts of books, it is not unreasonable to suppose that he would be enabled to tender many recommendations worthy of attention. He would be in a position to state, with authority in proportion to the amount of information communicated to him, in what districts it would be possible, and in what districts impossible to increase the stock; and in the former case he would at least be able to give advice as to the means whereby the wished-for result might be attained. I therefore counsel any one desirous of giving effect to Mr. Wolley's idea to begin by polling the Partridges.

There is one other point on which I would say a few words before concluding these remarks, and that is, on the great caution requisite not only in making the observations themselves, but also in drawing inferences from them. Scarcely any one is aware, until he has tried for a long time, how hard a thing it is to observe correctly. I have taken no small pains in this matter for some years, and the chief result is that I have learned to doubt many of my earlier observations, and consequently not to place implicit confidence in my later ones. As to the inferences, it is an old saying that anything may be proved by statistics, and a true one, if the statistics be not collected and worked up with the utmost fairness. It seems to me that the mere arrival at what an ordinary observer may fancy to be an approximate enumeration of the individuals of a species is not so very difficult. The danger to be guarded against lies in the not making sufficient allowance for the effects of causes, which I would call the disturbing forces, having an origin entirely independent of ornithology, such as unwonted abundance or dearth of food,—seasons, wet or dry, cold or hot, beyond the average. These must always exercise more or less influence on its numbers, while their continued variability makes their influence only to be duly appreciated by an observer of prolonged experience. With these considerations I leave the subject to the readers of 'The Ibis.'

Elveden, 4th March, 1861.

XXI.—*Recent Ornithological Publications.*

1. English Publications.

We have little doubt that most of our readers are already well acquainted with Mr. Tristram's work on the "Great Sahara*," which will indeed require no recommendation to those who have read that gentleman's lifelike sketches of a portion of his travels, and his interesting notes on the birds met with "south of the Atlas Mountains," already published in this Journal. As, however,

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* The Great Sahara: Wanderings South of the Atlas Mountains. By H. B. Tristram, M.A., F.L.S., &c. 1 vol. 8vo. London, 1860 (Murray).

Mr. Tristram's book, though not strictly an "ornithological publication," contains frequent references to the "feathered tribes," and moreover a zoological appendix, in which a full list of the birds of the Sahara is given, we feel bound to allude to it in our quarterly record of the events which relate to ornithology, and we take the opportunity of recommending its perusal to all (whether learned or unlearned in birds) as an instructive and amusing account of a region hitherto seldom penetrated by European travellers. We sincerely hope, also, that the success which, as we understand, the present work has already attained may induce Mr. Tristram to carry out his plan of giving us a second volume on the Regency of Tunis without further delay.

Some apology is owing from us to Dr. George Bennett for not having before made mention of his 'Gatherings of a Naturalist in Australasia*,' containing, as it does, many ornithological notices, the greater number of which, however, have already appeared in the 'Proceedings' of the Zoological Society. The work is illustrated by several beautiful plates, two being of birds: the one by Mr. Angas, the well-known draughtsman at Sydney, of that rare species the Australian Jabiru (*Mycteria australis*); the other, from Mr. Wolf's inimitable pencil, of the Mooruk (*Casuarius bennetti*), so often mentioned in these pages, and the discovery of which is due to the learned Doctor's zeal. It is indeed much to be wished that more of our brethren dwelling in the land of the Southern Cross would interest themselves in natural history, as the author of this work has done, and that speedily; for the Australasian fauna is doubtless about to undergo considerable changes, owing to the efforts now being made to people the Antipodes with European species.

A peculiar feature of Australian ornithology is the extraordinarily sudden and hardly yet accountable appearance of birds, often in great numbers, in particular districts where they had not before been seen, and their equally strange and total disappearance after a period generally short, but occasionally of considerable duration. Dr. Bennett, in terms quoted from the introduction to Mr. Gould's well-known 'Birds of Australia,' cites several instances of this irregular migration, mentioning *Nymphicus novæ-hollandiæ, Melopsittacus undulatus, Leucosarcia picata, Peristera histrionica, Geronticus spinicollis, Threskiornis strictipennis,* and, above all, *Tribonyx ventralis,* as especially subject to it.

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* Gatherings of a Naturalist in Australasia, &c. By George Bennett, M.D., F.L.S., F.Z.S., &c. London: J. Van Voorst, 1860. 1 vol. 8vo, pp. 456.

The author offers us (pp. 186, 187) a description of the egg of *Menura superba,* furnished him by Mr. Gould, of which that gentleman states, "up to the present moment (December 1859) no correct delineation or description has been given." We do not know whether this observation is meant to refer to the account formerly published in the 'Birds of Australia,' or to that of Herr Ludwig Becker in the 'Journal für Ornithologie' for 1856, where an egg, said to be of this species, is both delineated (pl. 2. fig. 18) and described (p. 133). Herr Becker's specimen seems not to differ from that of which the account is to be found in Dr. Bennett's pages, more than the eggs of the same species often do.

Should the 'Gatherings of a Naturalist' reach a second edition, we hope the author will give us a clearer explanation of the diagram at p. 78, which, he says, will serve to illustrate the peculiar flight of the Albatros. At present it appears to be impossible to comprehend it.

The 'Journal of the Royal Dublin Society' for July and October 1860 contains some "Notes on the Zoology of the last Arctic Expedition under Captain Sir F. L. M'Clintock," by Dr. David Walker, the ornithological portion of which is an amplification of the paper already published by this gentleman in this Magazine ('Ibis,' 1860, p. 165). We observe that the author withdraws from his revised list the name of *Anas fuligula,* which was included by him, in the article just alluded to, and by so doing justifies the doubt since expressed on the subject by Professor Reinhardt in his paper on the Birds of Greenland published in our last Number ('Ibis,' 1861, p. 1). We think it a matter of regret that Dr. Walker should have quoted, so much as he has done, from Edwards, Richardson, and Temminck, with respect to the geographical distribution of species; for many of their assertions, now repeated by him, have been shown by later investigations to have been founded in mistake, and several errors are thus perpetuated.

2. GERMAN AND DUTCH PUBLICATIONS.

Dr. R. A. Philippi's 'Journey through the Desert of Atacama,' of which we gave the title in our last Number (p. 109), contains a special chapter on the zoology of this singular and nearly rainless region of the Chilian republic, besides very many observations on every branch of natural history scattered throughout the narrative of the expedition. The account given of the birds (p. 161) is short and not very satisfactory, owing to the specimens collected having been partly mislaid and lost. The species mentioned as occurring within the limits of the desert are 33 in number, the greater part of them belonging to well-known Chilian species. *Polyborus montanus* (*i.e. Milvago megalopterus,* vide antea, p. 19) is the commonest bird of prey in the desert, and in this part of Chili descends to the coast. *Trochilus leucopleurus* (*i.e. Oreotrochilus leucopleurus*), a bird belonging to a group of *Trochilidæ* generally supposed to be confined to the higher Cordilleras, also descends here nearly to the coast, having been met with near Hueso Parado, at an elevation of not more than 1000 feet above the sea-level. *Upucerthia atacamensis* (p. 162, Zool. pl. 3) seems to be identical with *Cinclodes bifasciatus,* Sclater, described in the Zoological Society's 'Proceedings' for 1858 (p. 448), from examples collected by Bridges in Bolivia. *Totanus chilensis* requires further examination and comparison. The new three-toed Flamingo, already described by Dr. Philippi in 1854*, is, perhaps, the most interesting bird of the Atacamian desert. We find the following notice of its habits (p. 57), as observed near Tilopozo :—

"Two hundred yards from our well were six Flamingoes, of a new species without the hind-toe (*Phœnicopterus andinus,* mihi), which is only found in the high Cordilleras, but, as it appears, is not uncommon from Peru to Copiapo. It is wonderful that no naturalist seems to have seen it before. Garcilaso de la Vega

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* Annales de la Universidad de Chile, 1854, p. 164 : Gilliss's U. S. Nav. Astr. Exp. ii. p. 198 : Archiv f. Nat. xxi. p. 10.

(the son of one of the companions of Pizarro and Almagro) was, however, acquainted with this bird, and says it is called *Parrihuana.* In the desert of Atacama it bears the abbreviated name *Parrina,* and is without doubt the "Red-breasted Flamingo" of which Mr. Bollaert speaks in his description of the province of Tarapacá. It breeds on the elevated lakes of the Andes, and its eggs are brought for sale to the market of Atacama in December. At this time (January 19th) the females were incubating."

Of the 'Journal für Ornithologie' we have received numbers 3, 4, and 5 for the past year. Dr. Hartlaub's "Systematic Review of the Birds of Madagascar" is completed in the third number, and has been since issued in a separate form, which we shall notice in our next Number. The same number contains original articles by Dr. Cabanis on three African Thrushes, which he proposes to form into a group, to be called *Psophocichla;* and by Ferd. Heine on two new species of *Alcedinidæ* from the Pacific islands, and on a new *Xiphocolaptes,* belonging to the typical section of the genus.

In the 4th number of the same Journal is a very important article by Professor Burmeister, being a systematic list of the birds observed and collected by him during his recent expedition to South America. The three stations chosen by Professor Burmeister for his observations (at each of which he remained, we believe, for about a year) were Parana, Mendoza, and Tucuman, all in the Argentine Republic. Of these, the latter was in a district far less known to naturalists than the two former, and, as might have been expected, the most striking novelties in Professor Burmeister's list were met with in this locality. The total number of species enumerated in Professor Burmeister's list is 261, of which no less than 23 are considered to be new* to science.

Although we believe Professor Burmeister is preparing to publish a work containing the results of his travels, and will, no doubt, give in it full descriptions of these and other new species discovered in other branches of natural history, we must confess that we consider the diagnoses here given a little too meagre, and certainly rather calculated to deter one from describing any species at all resembling them than to lead to their identification. Some of his novelties, such as *Geobæmon rufipennis*, *Coryphistera alaudina*, *Saltator multicolor*, and the second species of *Cariama*, which Dr. Hartlaub has with such propriety named after its learned and enterprising discoverer, must certainly be recognized as most interesting additions to the class of birds.

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* *Falco punctipennis,* however, is, we suspect, the bird already described by Dr. Kaup (P. Z. S. 1851, p. 43) as *Harpagus circumcinctus;* and *Conurus brunniceps,* as we have ascertained by examination of a typical specimen received from Prof. Burmeister by Mr. Salvin, is *Conurus aymara* (d'Orb.), figured in Souancé's unfinished work on Parrots, pl. 23.

In the 5th number of the same Journal Dr. Cabanis has commenced a detailed account of the series of birds lately received by the Berlin Museum from Costa Rica, through the exertions of three Prussian travellers—Dr. von Frantzius, Dr. Hoffman, and Dr. Ellendorf, of whom Dr. Hoffman has, unfortunately, lost his life in the country he was so energetically exploring. Of this communication, which contains much of interest, especially to those amongst us who have been working at the ornithology of Guatemala, we propose to give a more extended notice when the following portions are issued.

When one of our good friends and colleagues published his *Gallinula minor* as a "new species" in the same Journal (p. 341), he had surely forgotten all about 'The Ibis,' and the *Gallinula pumila* already described and figured in our first volume. We recommend him to write us a penitent letter asking pardon for his offence, and promising never to offend again in like manner!

Herr Bädeker's 'Eier der Europäischen Vögel' has reached its sixth part, and continues to exhibit much the same merits and failings as those on which we have before remarked ('Ibis,' i. p. 400). Thus, though not a few of the eggs of each species are well represented, we seldom are told on whose authority we may rely for the genuineness of the specimens figured. The writer of the letter-press, while regarding the Barn-Owl of North America (*Strix pratincola*) as identical with that of Europe (*S. flammea*), yet considers *Lagopus montanus* distinct from *L. mutus*,—the difference between these latter being, we should imagine, quite inappreciable to any naturalist not belonging to the family of Pastor Brehm!

Professor Schlegel's contribution to the little annual published by the Society 'Natura Artis Magistra,' of Amsterdam, consists this year of "Some words on the Black Cockatoos and the Paradise-birds," in which he gives a general review of the geographical distribution of these groups of birds. We may remark that Professor Schlegel unites under one generic name in his present notice the *Paradiseæ* and *Epimachi*. As to these birds belonging to the same natural family, we think there can be little doubt; but we suppose that even Professor Schlegel would not arrange them all under one generic name except in a popular publication like the present. The habitats of the Paradise-birds, as far as they are yet known, are stated with great precision.

3. SCANDINAVIAN AND RUSSIAN PUBLICATIONS.

The second part of the second volume (new series) of the 'Transactions' of the Royal Swedish Academy (Kongliga Svenska Vetenskaps-Akademiens Handlingar), published last year, contains a valuable contribution to the ornithology of South Africa, in the shape of some "Zoological Notes of the late Johan Fredrik Victorin, compiled and arranged from his papers by J. W. Grill," communicated to the Academy on the 16th August, 1858. Victorin arrived at Cape-town in November 1853, where he continued collecting until the end of February following, when he sailed to the eastward for Mossel Bay, and thence proceeded by George-town to Knysna—his "land of promise." There he remained until the next December, returning by a circuitous route through the Karroo to George-town. He finally left Cape-town in March 1855, having thus passed sixteen months in the southern districts of the colony, during which time he appears to have collected very diligently. The fruits of his expedition seem to have been nearly all presented to the Museum at Stockholm, and, we are informed, contained 517 examples of birds of 153 species, and the eggs of 11, all stated to have been in first-rate condition. But far better than these seem to have been the careful notes which he affixed to his specimens or entered in his Journals. From these, Herr Grill's paper has been drawn up, and in a manner well deserving of imitation,—Professor Sundevall supplying the diagnoses of the new species of birds, which are, *Bradypterus victorini* and *B. sylvaticus*, both obtained at Knysna.

Victorin himself unhappily died of consumption soon after his return to his native country, at the age of twenty-four years. Herr Grill very properly remarks, in his introductory note to this communication, that "the Bird-fauna of the Cape colony not having hitherto been separated from that of Caffre-land, and Le Vaillant in his 'Oiseaux d'Afrique' having still more confused our knowledge of the subject by mixing up a number of species from Australia, India, Madagascar, America, &c.*, every collection, with accurately given localities, and notes made on the spot, is of the greatest weight." Such a collection was Victorin's: it is stated to have been made "with extraordinary care and skill,"—every specimen being not only beautiful and well prepared, but marked with the date, locality, sex, colour of the eyes and feet, dimensions, and other explanatory circumstances. In addition to this, he kept, as has been before mentioned, very compendious journals, chiefly written in English, partly under the name of "Zoological Notes," and partly under that of "Day Book." His early death is assuredly well described as a severe loss to science.

Dr. L. von Schrenck's work on the Birds of Amoorland, of which we have given the title in our last Number (p. 111), is a most valuable contribution to our knowledge of the geographical distribution of the species belonging to the Palæarctic Avifauna, and requires a few remarks from our pen. We must premise that Dr. v. Schrenck was placed in command of a scientific expedition for the exploration of the newly acquired Russian territory on the Amoor, sent out by the Imperial Academy of Sciences of St. Petersburg in 1854. The species treated of in this work are mainly such as came under Dr. v. Schrenck's personal observation during his two years' sojourn in that country, with the addition of those collected by Herr Maack, who made an expedition from Transbaikalia to the Amoor and back in 1855; and by Herr Maximowicz, a botanical collector in the employ of the Imperial Botanical Gardens of St. Petersburg, who was also travelling on the Amoor from 1854 to 1856. The whole number of species thus embraced in the body of the work is 190. At the end of the volume, however, before conclusions are drawn as to the general character of the ornithology of this country, extended lists are given of other species attributed to the same locality by different authorities, and of such as might have been expected to have been found there from their occurrence in localities not far distant, so that every endeavour has been made to render this volume a complete guide to the ornithology of this part of the world.

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* Kongl. Vet. Akad. Handl., Band ii. No. 3 (1857): 'Ibis,' 1859, p. 324.

With the general conclusion drawn by Dr. v. Schrenck from these elements, "*that the prevailing character of the Avifauna of Amoorland is Europæo-Siberian,*" or, as we should prefer calling it, PALÆARCTIC, we fully agree; but when we come to discuss the foreign elements which are certainly present, though to a very limited degree, we must say a few words upon the method which our author has followed in treating of his species. On the difficult question where we are to draw the line between "species" and "local varieties," we have on one side the views of such naturalists as Mr. Wallace, who broadly state that it matters not how small the difference is between two representative species provided it be constant, and on the other the practice of many eminent zoologists, who are accustomed to class together a large number of species, usually considered as distinct, as merely local or climatic varieties of one typical form. Between these opposite views there is certainly ample room for every shade of opinion. Every naturalist, indeed, has his own ideas on this matter. The fact is, that the amount of difference requisite to establish specific distinctness between two sets of individuals is, as has been well maintained by an eminent writer, whose views are adverse to the real existence of species, "a matter of opinion," and we should therefore be very careful in blaming writers whose ideas on this point may be at variance with our own. But, nevertheless, this much is to be said upon the subject, the truth of which we presume few will venture to deny. In the first place, every variation of form, however minute, whether considered specific or not, is worthy of record; and, secondly, perfect specific identity should not be predicated of any two sets of forms coming from widely distant regions without actual comparison of examples. When differences are often so minute and yet so constant, it is not sufficient to draw conclusions as to specific identity from descriptions and figures, however excellent. Now against this last rule it appears to us that Dr. v. Schrenck, no doubt owing mainly to the want of opportunity—certainly not from the wish to escape work—has in many instances offended; and we shall proceed to notice a few of them, to some of which our attention has been particularly directed by Dr. Hartlaub.

Acanthylis caudacuta (p. 250) is considered identical with the Australian bird. It may be so; but such a point can only be considered established after examination of a large series of examples from each locality. Had the Amoorian bird been united with the Himalayan form, *Acanthylis nudipes* (*Hirundo nudipes*, Hodgs.; *Cypselus leuconotus*, Delessert), we should hardly have made the same objection. But we cannot allow that the same "species" of bird can exist in two widely separated localities without existing also in the intermediate space, and we have never heard that this *Acanthylis* has been met with in the Indian peninsula, Java, Sumatra, Borneo, or New Guinea. Dr. v. Schrenck's suggestion that the bird regularly migrates from the Amoor to New South Wales cannot surely be serious*.

Alcedo ispida, var. *bengalensis* (p. 265). This "local variety of our Kingfisher," as Dr. v. Schrenck prefers to call it, is a much smaller bird than *A. ispida*, but has the beak remarkably longer. In this case, however, an elaborate discussion is entered into upon the variations, and a series of measurements is given, and we have no complaint to make.

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* The existence of this Swift in N.E. Asia will perhaps explain the occurrence of the so-called "Australian Spine-tailed Swift" in the British Islands. We have little doubt that it was a wanderer from Eastern Asia that was recorded under this name (Zoologist, 1846, p. 1492) as having been captured in this country, if the statements there given are to be relied upon. Such an occurrence would not be more unlikely than that of *Anthus richardi*, *Turtur gelastes*, *Phylloscopus superciliosus* seu *reguloides*, and other accidental visitors to Western Europe from the far East.

Pica cyanea, Pallas (p. 318), of Siberia, is very unnecessarily united with the Spanish bird, *Pica cooki,* Bp. It may be very true that in the Siberian bird the amount of white at the termination of the two medial rectrices varies a little; but had Spanish examples been examined, it would have been seen at once that the white spot is here not present at all!

Corvus monedula! (p. 324). Even Professor Schlegel, who cannot be pronounced a species-maker, allows *Corvus dauricus* to be a distinct species from the European Jackdaw. Dr. v. Schrenck does not even consider it as a permanent local variety. It is very true that intermediate forms are found. In S.E. Europe we have *Corvus collaris* of Drummond, which may be so termed. But there are several, not to say many, well-known cases of intermediate forms between representative species.

Cinclus pallasii (p. 331) is united with *Cinclus mexicanus*—a union, which such examples of these birds as have fallen under our inspection would certainly not justify.

Oriolus cochinsinensis, var. *indica*! (p. 346). The Black-naped Orioles are certainly separable into several well-marked local forms, which ought not to be confounded, whether they are called species or varieties. The true Philippine bird (*Oriolus acrorhynchus* of Vigors) is much larger than *O. sinensis,* to which race we suppose the Amoor specimens belong, and has no trace of the yellow speculum. If Dr. v. Schrenck had a series of examples from all the different localities before him, we have little doubt he would be able to distinguish them easily.

Lusciola (*Nemura*) *cyanura,* Pallas (p. 361), is, we are informed, "without doubt" the same bird as that which Hodgson has described as *Nemura rufilata* from Nepal. That these two species are congeneric we well believe; but that they are strictly identical could not be safely predicated without an accurate comparison of specimens. Dr. v. Schrenck has not had the opportunity of doing this, perhaps; but even an examination of the figure of *Nemura rufilata* in the 'Contributions to Ornithology' might have induced him to modify his assertion. The

Nepalese bird has not even a *trace* of the large and conspicuous white ante-ocular spot.

That *Zosterops japonicus* (p. 365) of N.E. Asia should be identical with *Z. chloronotus,* Gould*, of *Western* Australia, is, when we recollect that *Z. chloronotus* itself is only the West-Australian representative of *Z. dorsalis,* a statement so entirely contrary to the canons of geographical distribution, that we should hardly believe our eyes if it were proved to us by actual comparison of specimens. But what can we say when this identity is established merely on an examination of Mr. Gould's figure of the Australian bird? The two species are, in truth, conspicuously different, the Asiatic bird being much smaller, and having the abdomen very differently coloured.

Tetrao canadensis (p. 399). It is now well known, we should have thought, to every European naturalist, that the Siberian Grouse, called by Middendorf by this name, is by no means identical with the American *T. canadensis* or *T. franklinii,* whether these be considered as two species or as one. Dr. Hartlaub pointed out the very marked and unmistakeable characters which separate the Asiatic *Tetrao falcipennis* from the American bird in 1855 (Cab. Journ. f. Orn. p. 39), and examples of the former with its singularly constructed wing are now found in most of the larger collections of Europe †.

It would be easy to continue remarks of the same sort as the preceding; but we rather return to Dr. v. Schrenck's general observations on the birds of Amoorland—a subject to which he has devoted some very interesting pages. Of the 190 species enumerated in the body of the work as appertaining to this portion of its fauna, he considers $\frac{7}{10}$ths to be Europæo-Siberian and $\frac{2}{10}$ths Siberian, the remaining $\frac{1}{10}$th being intruders from Southern Asia and more distant localities. An examination of the eighteen species which are included in the latter category gives us but few belonging to really extraneous types. *Pericrocotus* and *Zosterops* are the two most noticeable, if not the only such, of which the former is a pure Indian genus, and the latter common to the Indian, Australian, and Æthiopian regions. The only species described by Dr. v. Schrenck as new to science is a small Sylvian—*Salicaria* (*Calamodyta*) *maackii*—nearly allied to *Calamodyta phragmitis, C. cariceti,* and *C. aquatica,* of which a figure is also given. We must also not fail to call attention to some of the notices of rarer *Anatidæ* in this volume. The true breeding-quarters of the Mandarin Duck (*Aix galericulata*)—a "very common bird" on the Amoor—were, we believe, previously quite unknown. And, in conclusion, we must again remind our readers of the great value of the whole work, even though exception be taken to some of its details. We may, indeed, say that Dr. v. Schrenck's volume is absolutely essential to any one who wishes to attain a complete knowledge of the birds of Europe, or even of England, as giving details concerning the range of the greater part of our native species, and a fauna of a country whence many of our rarer stragglers have been derived.

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* The true name of this bird is *Z. gouldi,* Bp. (Consp. p. 398),—*Z. chloronotus* being a Mauritian species.

† We may particularize those of Paris, Bremen, and Brunswick.

4. AMERICAN PUBLICATIONS.

The Academy of Natural Sciences of Philadelphia have issued their 'Proceedings' up to the close of 1860. At p. 374 will be found a paper of much interest to those of our friends who have been working at the ornithology of the West Indies, being a Catalogue of Birds from the island of St. Thomas, collected and presented to the Academy by Mr. Robert Swift, with notes by Mr. Cassin. Twenty-seven species are enumerated. *Tyrannula martinica* is evidently the same bird as is described in Proc. Zool. Soc. 1860, p. 314, as *Elainia riisii**. Before adopting for it the Linnean name employed by Mr. Cassin, we should like to see specimens from Martinique. *Dendrœca petechia* is rightly distinguished from *D. æstiva* of the continent†. The Humming-bird (No. 12) should be *Eulampis chlorolæmus.* The *Eupsychortyx,* about which there has been some discussion in this Journal (*antea,* p. 114), is considered to be *E. sonninii*—"exactly the species figured by Mr. Gould under the name, and identical with specimens in the Academy's collection labelled 'Venezuela' and 'Cumana.'"

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* See also 'Ibis,' 1860, p. 307.

† Compare Dr. Cabanis's remarks on this section of the *Dendrœcæ* in 'Journ. f. Orn.' 1860, p. 327. His *D. ruficeps,* of which we have examined many specimens, is the same as Mr. Cassin's *D. vieilloti,* Proc. Acad. Philad. 1860, p. 192.

Through Mr. Lawrence's kindness we have received copies of two papers published by him in the 'Annals' of the Lyceum of Natural History of New York. His notes on Cuban birds contain the results of a comparison of some specimens from Dr. Gundlach's and Mr. Forns's collections with their American representatives. *Tinnunculus sparverioides* of Vigors is considered to be distinct from *T. sparverius.* The Cuban bird, representing *Accipiter cooperi* of Northern and *A. pileatus* of Southern America, is regarded as different from either, and named *A. gundlachii. Accipiter fringilloides* of Vigors is re-established as distinct from *A. fuscus* of the United States. Of *Cymindis wilsoni* of Cassin, specimens sent by Mr. Forns agree very closely with the original description and figure in the Journal of the Philadelphian Academy. We fear our figure in the first volume of this Journal has been somewhat in fault in inducing Mr. Lawrence to separate the *Gymnoglaux* into two species, the white spots being certainly present in the S. Croix bird. We do not believe that *Gymnoglaux newtoni* is different from *G. nudipes*; and Mr. Lawrence seems to have forgotten that the term *nudipes* was founded on specimens from Porto Rico. If there are two species, therefore, examples from Porto Rico must be examined before it can be asserted that the Cuban bird is "assuredly the true *nudipes*." Another new species from Cuba is described as *Antrostomus cubanensis,* representing the continental *A. vociferus.* The *Dendrœca* called *albicollis* is, we suppose, the true *D. petechia,* as recently determined by Mr. Cassin in his paper on the birds of St. Thomas, referred to above. Other notes of interest are given, upon the specimens received, which belong in all to 27 species; and the whole paper forms a very acceptable contribution to our knowledge of this peculiar Island-fauna.

A second paper of Mr. Lawrence, read at the same date (May 21, 1860), describes two new birds from the Isthmus of Panama, *Myiarchus panamensis* and *Phlegopsis macleannani.*

Mr. Elliott's *Eupsychortyx albifrenatus,* also described in the 'Annals' of the Lyceum of Natural History (April 1860), is evidently *Ortyx leylandi,* Moore, Proc. Zool. Soc. 1859, p. 62.

A printed sheet of four pages (forwarded to us by post) gives a list of the birds observed round Quebec, by J. Le Moine, Esq., drawn up "after the system of the Smithsonian Institution."

XXII.—*Letters, Extracts from Correspondence, Notices, &c.*

We have received the following letters:—

To the Editor of 'The Ibis.'

26 Pembridge Gardens, Bayswater,
1st February, 1861.

Sir,—During a stay in Egypt in the latter part of 1857, I shot near Kafr Dowar, a village on the Mahmoudieh Canal near Alexandria, a specimen of *Budytes cinereocapillus*. This was the only one that came under my notice. Heuglin, who is, I believe, the latest authority, does not include this species in his 'Syst. Ueb. d. Vög. N. O. Afrika's,' so I send you the above notice of its occurrence for publication in 'The Ibis,' if you think it of sufficient interest. M. Loche gives it as an inhabitant of Algiers (Cat. Mamm. et Ois. de l'Algérie, p. 80), while *B. rayi* is the only species found in Western Africa (Hartlaub, System d. Orn. W. Afrika's, p. 72). I may add that I was fortunate enough to obtain a *Chettusia leucura*, which I saw exposed for sale in the market at Alexandria. It had been shot in the vicinity by an Arab gunner, but does not generally occur below the Cataracts.

Yours, &c., John Cavafy.

To the Editor of 'The Ibis.'

Fordingbridge, February 12th, 1861.

Sir,—In your periodical for October last, I ventured to direct attention to the non-existence of a reliable list of British birds, and to express a hope that this want might soon be supplied by some of your able contributors.

On referring to your interesting review of Herr Bädeker's and Dr. Brewer's oological works in 'The Ibis' for October 1859, I have more than ever felt the difficulty under which I labour from not knowing what birds really *ought* to be considered *British*.

I am quite prepared to accept your list of thirty-five British desiderata as perfectly authentic, although Mr. Hewitson figured three of them (Snowy Owl, Great White Heron, and Bewick's Swan) in his *second* work, and, so far as my memory serves me, omitted only one (the Great White Heron) in his third work; but as I have only the *second* work within reach at present, I may be mistaken in this.

Now although I believe there are thirty-five deficiencies in British oology, I am still at a loss to discover how many known species ought to be considered British, and I should feel deeply indebted to yourself, or any other member of the British Ornithologists' Union, who would kindly inform me how I can obtain a reliable list of British birds, and still more indebted to any one who would publish such a list in the way suggested in my last letter.

In common with many others who feel a real interest in the study of ornithology, I am too much engaged in professional avocations to admit of my devoting much time to the pursuit, and am obliged to confine my attention pretty much to British birds; consequently I am desirous that my knowledge of these should be as exact as possible, and this, without an authentic list, is difficult to attain.

Yours, &c., BEAVEN RAKE.

Mr. Samuel Stevens has just received a letter from Mr. A. R. Wallace, dated "Ternate, December 7th," in which he writes as follows:—"I returned to Ternate a few days after the last mail had left here, having had a most hazardous voyage from Ceram and Waigiou. My collections are immense, but very poor, when it is considered that they are the result of nine months' collecting by two persons in East and North Ceram, Mysol, and Waigiou. Ceram is a wretched country; and the Papuan Islands, now that the cream is taken off by Aru and Dorey, are really not worth visiting, except for the Birds of Paradise.

"My beetles, I am sorry to say, are most miserable—smaller and more obscure species than at Dorey, and only a few of the good ones found there, and none in any quantity.

"In birds there is absolutely nothing good but the *Paradisea rubra*, which is the only species that inhabits Waigiou, and is peculiar to that island.

"I have been so busy with my mass of specimens (all wanting sorting and cleaning), and with my numerous letters and books (a whole year), that my mind has been too much unsettled to write. Next mail I shall write to all my entomological and ornithological friends who have been kind enough to send me communications.

"I do not like the figure of *Semioptera wallacii* copied in 'The Ibis' from Gould's: the neck-shields are not shown to advantage; and the white plumes should be raised much higher or laid down lower—they are neither one thing nor the other.

"C. Allen starts in a week or two for N. Guinea—to the true locality for the rarer Birds of Paradise, and I trust he may be successful. The last voyage, with all its dangers and disappointments, has nearly sickened me, and I think in *one year* I shall return.

"I seem to have all your letters but one (April 16, 1860)."

The following extracts are from letters recently received by us from Mr. Edward Blyth:—

"Calcutta, January 4th.

"I have just received 'The Ibis,' vol. ii. No. 8, and need I say that I am delighted with it? My compliments especially to the Hon. T. L. Powys and to Mr. W. H. Simpson. I have also something like a compliment to send you on the part of my little *Shâma* (*Kittacincla macroura*), whose cage hangs about eight paces from where I am now writing, and thoroughly enjoying existence at the delicious temperature of 70° Fahrenheit. Turning to p. 410, opposite to which is a figure of *Circaëtus zonurus*, and holding it up to look at it, little *Shâma* immediately became in a violent condition of excitement. No doubt at all about it, as I have proved a second and a third time. There is something about that spirited figure of *Circaëtus zonurus* which *Shâma* less approves of than I do. We have all heard of the old Greek painter who deceived the birds. Here is a modern instance; and, I cannot help thinking, a sufficiently remarkable one. Alexander von Humboldt, in his 'Personal Narrative,' if I remember rightly, relates that a small South-American monkey at once recognized the insects it had been accustomed to prey upon, though represented only in outline or uncoloured. Contrast that with the non-appreciation of a picture by Arabs or certain other races of human kind!

"Well, in your No. 8, p. 323, I demolished a luckless Monsieur Payen, who cheerfully fancied that he had made a grand discovery about the comestible birds'-nests. Now it comes to the turn of my good and exceedingly respected friend, Robert F. Tomes, Esq., who tells us (p. 318) that, as far as he knows, 'the name of Professor Macgillivray stands alone in justification of the alleged Fringilline affinities' of the so-called Bearded Titmouse.

"Now, it does so happen that the very first ornithological essay I ever committed to writing in my life was about this very bird, which I called 'Bearded Reedling,' and not Tit, or Titmouse. This was in 1832, in the first number of Rennie's 'Field-Naturalist's Magazine,' wherein I made my *début* as a scribbler in Natural-History matters. I have had much to answer for since then! But, however that may be, it seems that I do not happen to have this particular number handy to refer to at this instant; nevertheless I recommend those who possess the opportunity to revert to it, because they will find some sound and direct personal observations on the habits of the '*Bearded Reedling*,' whose affinities I at that time thought were *Shrikish*. By the way, this species is 'the Least Butcher-bird' of Goldsmith's 'Animated Nature,' in which I suppose that the agreeable author of 'The Traveller' and the 'Deserted Village' copied Buffon as usual.

"However, in that same 'Field-Naturalist's Magazine' for April 1833, p. 190 *et seq.*, in returning to the charge, I would not listen to anything about affinity with *Parus*, and I think that it may be discerned that even then my notions were already approximating *Finch*-ward.

"In 1838 I took a part in a new translation of Cuvier's 'Règne Animal,' wherein, if you refer to p. 198, you will find that I assert of the Reedlings (*Panurus* seu *Calamophilus*) that 'their anatomy is strictly that of a Finch; and they are much more nearly related to the Waxbill-Finches than to the Tits, with which latter they have little in common. The gullet has an extremely long dilatation, or craw, and the gizzard is remarkably muscular.' In the same work (p. 180) I remarked of the *Falcunculi*, that 'they are nearly Tits, with a somewhat Shrike-like bill, and resemble our common *Pari* in their manners, notes, nidification, eggs, and plumage.' Others have since come over to the same opinion.

"In my Catalogue of the specimens of Stuffed Birds in the Asiatic Society's Museum, Calcutta (1852), I placed *Panurus* at the tail of the *Fringillidæ* (p. 134), under the heading of '*Incertæ sedis.*'

"Permit me further to inform you that our late most sincerely lamented friend William Yarrell was about to perpetrate, through his artist, a most thoroughly detestable figure of *Panurus biarmicus*, carefully and minutely copied from a villainously stuffed specimen, when I happened to call upon him just in the very nick of time, and gave him an off-hand sketch of about the genuine outline, which appears (in his third edition) in vol. i. p. 406: only the tail is not quite long enough, nor the tarsi; and that shadow of a shade of the moustache is, of course, a mistake, such as non-naturalist artists are so extremely prone to indulge in.

"Of course you know that the late Prince Bonaparte described a second race of the *Panurus* genus from Kamtschatka, in one of his papers in the 'Comptes Rendus'—about such a form as our friend Charles Darwin would designate an 'incipient' species.

"I observe in p. 353 that Mr. Powys remarks of the Gadwall Duck, that it is 'by far the best for the table of the European *Anatidæ*.' I have digested several Gadwalls this season, and I don't think that he is very far from wrong; but the best of all the Duck tribe, so far as my experience goes, is decidedly *Fuligula rufina*. Much, of course, depends upon the cookery: too often, as the poet tells us, 'cooks come from t'other place!' But a fine fleshy Red-crested Pochard, just done to a turn, and not overdone, must be equal to the finest 'Canvas-back' that ever was roasted. To say the least, I cannot conceive the possibility of anything of the sort being finer! I undoubtedly am a bit of an epicure in a quiet way, and have just been feasting off Glossy Ibis. Take my word for it, a roasted *Falcinellus igneus* is anything but contemptible fare.

"Some time ago, I met a stranger who had been travelling in the Middle Island of New Zealand (I wonder if he will ever read this). Of course I was curious about the *Apteryx owenii*; and I showed him Gould's figure of the bird, and tried to make him comprehend some notion of its value. 'Good,' said he, 'I know it well: we ate four of them in one pie!' Alas for *Apteryx owenii*, as well as for the last surviving specimens of *Dinornis* or *Palapteryx* (if such there yet remain), to be put into a pie! 'Gather your roses while you may,' Mr. Editor, and collect your impennates before this pestilent civilization spoils and ruins everything!"

"Calcutta, January 19.

"In my small garden near the entrance of my residence is a tolerably umbrageous tree, the branches of which are convenient for hanging up dendrophytic orchids, ferns, &c. Now, from the foliage of this tree I have several times lately heard a remarkably sweet, low, continuous warbling note, and could not imagine what bird it came from—supposing it, however, to be some delicate little Becfin. This morning I was determined to settle the question; so I brought out my spy-glass, and, lo! what should the songster prove to be but *Lanius superciliosus* (Indian variety, *phœnicurus*), which I had only known heretofore as an exceedingly harsh chatterer? I have much pleasure therefore in noting this redeeming point about this bird; and it is not the only one: for, harsh as his ordinary chattering may be, either that chatter, or the brisk and smart apparition of the pretty little sprightly Pied Wagtail (*Motacilla luzoniensis*)—one or the other—is annually, to us here who note and observe, the earliest familiar token of the most welcome approach of what we designate by comparison the 'cold' season. Moreover, I have never observed this *Lanius* to be murderous; and, as regards other birds, I doubt if it ever is so."

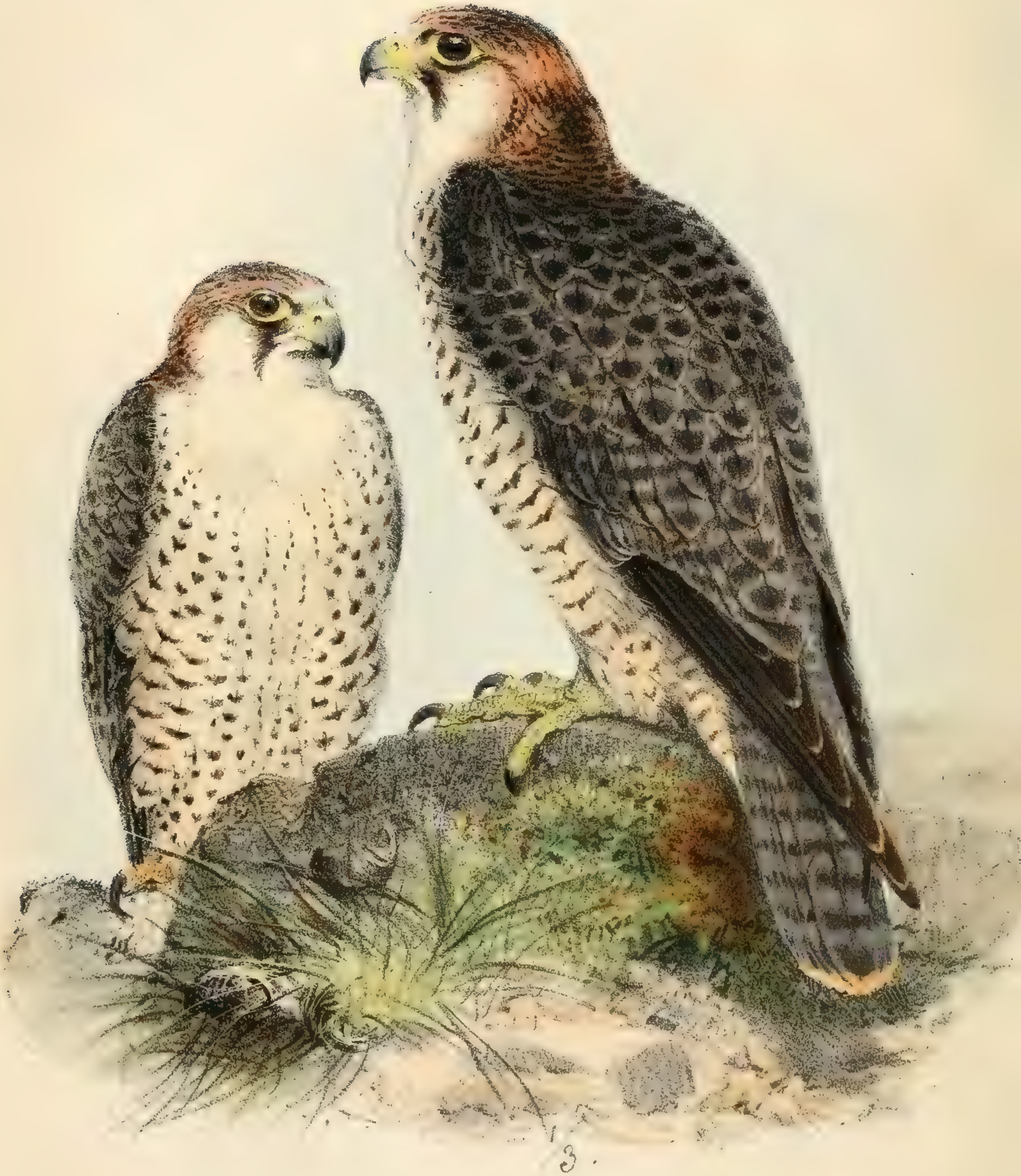
"January 22.

"Babú Rajendra Mallika has just got another fine batch of things, including seven Victoria Crown-Pigeons (*Goura victoriæ*), a superb male *Microglossus* to match with his female (the ♂ is considerably larger than the ♀), and one of those beautiful Ground-Pigeons (*Calœnas cruenta* vel *luzonica*).

"I was about to take a short trip to Burmah; but as our friend J—— is appointed to a station on the Sitang River, in Tenasserim, I start in a steamer in the course of a couple of days or so, and mean to accompany him at least as far as Maulmein."

The subjoined extract from the "Argus" of October 25th, 1860, gives the most recent account of the progress of the experiment of the introduction of English Singing-birds into Australia, which has recently been undertaken at Melbourne. It will be observed that the little immigrants have adopted the Australian seasons, and begun to nest in October! :—

"The English birds at the Botanic Gardens are now all in a bustle. They seem perfectly awake to the character of the season. The little Warblers are busy in nest-building, and performing all the other tender offices which mark their proceedings at spring time. The Larks are already multiplying, and the Thrushes have nests both in the aviary and in the open air. The Starlings and Blackbirds which were brought out by the 'Lincolnshire' and the 'Essex' occupy a building in the Botanic Gardens' reserve, which is usually devoted, in the winter, to the accommodation of the Alpacas and other quadrupeds. Here they will remain until their plumage—lost or disordered on the voyage—is restored, when they will be removed to the aviary, and thence to the open air. A similar house holds a number of Thrushes that are nest-building in the orange and Japanese spindle-trees which are placed there. In the aviary the same interesting process is going on. There the Goldfinch, the Linnet, and the Java Sparrow have nests, as well as the Thrush and the Quail—due care, however, being taken for the separation of the peaceable from the pugnacious birds. The Pheasants are engaged in egg-laying, and for the work of incubation the assistance of some Bantam fowls has been secured. The whole of the arrangements for the preservation of the birds which have been sent from England, and the propagation here of the feathered tribes of the old country—thanks to the indefatigable Dr. Mueller—are as complete as can be desired."



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J Wolf del. et lith

M & N Hanhart Imp

FALCO BABYLONICUS

THE IBIS.

No. XI. JULY 1861.

XXIII.—*Notes on Birds observed in Oudh and Kumaon.*

By Captain L. Howard Irby, 90th Regt.

(Plate VII.)

The following notes were made in Oudh, from October 1857 to August 1860, with the exception of about two months, from April 15th to June 15th, 1859, during which time I was in the British Himalayan province of Kumaon. During the first part of the time, in Oudh, the disadvantage of being in an enemy's country (for a long time without any kit) prevented my making notes; and many specimens which I obtained and skinned were lost or destroyed, either by insects or through being continually on the march.

The province of Oudh is well situated for an ornithologist, containing every variety of soil; and bordering on the Nepalese hills is the "Terai" forest—a part very little explored, except by tiger-shooting sportsmen. The intense heat in the hot and rainy season confines a European to his bungalow, except for a couple of hours in the morning and evening; and even in the "cold season," from October to March inclusive, it is unpleasantly warm at mid-day; so that, on the whole, the disadvantages preponderate.

The names here employed are the same as those used by Mr. Blyth in his 'Catalogue of the Birds of the Asiatic Society's Museum'; and, unless otherwise stated, the notes apply to birds observed in Oudh.

1. Palæornis alexandri.

Common, in large flocks, in the Terai jungle, at the foot of the hills, during the cold season. It is known to the natives as the Hill-Parroquet.

2. Palæornis torquatus.

Excessively abundant throughout the year; more particularly so at the middle and end of the rainy season. Breeds in the holes of trees.

3. Palæornis cyanocephalus.

Common in the cold season in jungly districts: probably resorts to the hills during the hot weather, as I did not then notice it in Oudh, and it was common in the valleys of Kumaon in May and June 1859.

4. Falco jugger. (Male "Jugger," female "Luggur".)

Seen and killed at Alumbagh, in January 1858. I observed what I supposed to have been this Falcon upon many other occasions in the cold season. It is much used by the native falconers, but is rather deficient in pluck, as compared with the Peregrine Falcon.

5. Falco babylonicus. (Plate VII.)

A single specimen of this Falcon was obtained in October 1858, at Newabgunge Bara Bunki, Oudh, and is now in the Norwich Museum. Mr. Sclater has kindly supplied me with the following remarks upon this hitherto undescribed bird:—

"Capt. Irby's specimen seems to be referable to a new species or distinct variety of true Falcon, most nearly allied to *Falco barbarus* (of 'The Ibis,' 1859, p. 184, pl. 6; *Falco peregrinoides* of Temminck), for which Mr. Gurney proposes to use the name *Falco babylonicus*, the first specimen of it having been obtained in Babylonia by the Euphrates Exploring Expedition.

"The coloration of *F. babylonicus* is nearly similar to that of *F. barbarus*, but generally lighter, and rather more rufous on the front of the head: the size, however, is nearly one-third greater, being the same as that of *F. lanarius* of Schlegel. From the latter bird it may be distinguished—(1.) By the absence of the whitish frontal band, the rufous of the vertex extending forwards on to the cere, and being bordered behind by a broad band of dark slaty-brown, which divides it from the rufous of the nape. (2.) By the feathers on the back of the neck below the nape being bordered with rufous of the same tinge as on the nape. This edging is sometimes present in *F. barbarus,* but never to the same extent in *F. lanarius.* (3.) By the comparative absence of spots on the upper portion of the lower surface, in which character it nearly agrees with the Abyssinian form of *F. lanarius,* which I take to be strictly Lichtenstein's *F. tanypterus.* The middle claw of *F. babylonicus* is longer than that of *F. lanarius,* in which respect it also approaches to the structure of *F. barbarus.* Judging from the partial remains of the immature plumage in one specimen, it would appear that in this stage the bird most nearly resembles *F. peregrinus,* in which particular it also agrees with *F. barbarus.*

"Besides Capt. Irby's specimen (No. 1), I am acquainted with the following individuals, referable to *F. babylonicus* :—

"2. An example in partially immature plumage, already alluded to as procured by the Euphrates Exploring Expedition in Babylonia, and presented by Commander Jones to the Museum of the East India Company. This is one of the two specimens of '*F. peregrinator*' of Horsfield and Moore's Catalogue of the Birds of that Collection, entered as 'presented by Commander Jones;' the other of the two being apparently a young *F. peregrinus*—certainly not *F. peregrinator.*

"3. An adult specimen in the Norwich Museum, procured from M. Parzudaki of Paris, and *said* to be from Abyssinia.

"4. An adult specimen, also in the Norwich Museum, procured from Mr. Warwick, of which the locality is not known.

"I may remark that Mr. Blyth has lately (Journ. Asiat. Soc. Beng. xxviii. p. 281) distinguished the Indian variety of the Peregrine from the European bird as *F. calidus*—the name being adopted from Latham, who, in his 'Index Ornithologicus' (vol. i. p. 41), conferred that title upon the 'Bauri' Falcon of India. The present bird, however, does not belong to the group of true Peregrines, but rather to that containing *F. lanarius,* Schlegel, *F. tanypterus,* Licht., *F. biarmicus,* Temm., and *F. barbarus,* Salvin.

"I annex the dimensions of the first three specimens of *F. babylonicus*, in inches and tenths:"—

Spec.	Locality.	Long. tota.	alæ.	caudæ.	tarsi.	dig. med.
1.	Oudh ..	17·3	13·	7·0	1·95	2·05
2.	Babylon .	17·0	12·5	6·6	1·95	1·95
3.	Abyssinia	18·0	12·8	6·5	2·00	1·95

6. FALCO CHICQUERA.

A common resident; usually seen in the wooded parts of the country.

7. HYPOTRIORCHIS SUBBUTEO. (Hobby.)

Two seen in Oudh in September 1858.

8. TINNUNCULUS ALAUDARIUS. (Kestrel.)

Common throughout the cold season; occasionally seen during the rains.

9. TINNUNCULUS CENCHRIS. (Lesser Kestrel.)

Seen in the cold season.

10. ELANUS MELANOPTERUS. (Black-winged Elanus.)

Not uncommon in woody country during the cold season, especially in the jungles near Khyreegurh.

11. CIRCAËTUS GALLICUS.

Seen occasionally in the cold season.

12. CIRCUS ÆRUGINOSUS. (Marsh Harrier.)

Most abundant during the cold season near all swamps and jheels: is very annoying to the wild-fowl shooter, driving up the ducks, but never seems to catch any but wounded ones. The adult birds are more frequently seen than the immature.

13. CIRCUS SWAINSONII. (Pallid Harrier.)

Very common in the cold season in open cultivated country.

14. CIRCUS CINERASCENS. (Montagu's Harrier.)

Found in the same localities as *C. swainsonii*, and is perhaps more numerous.

15. CIRCUS MELANOLEUCOS. (Pied Harrier.)

Very abundant near the rivers Choka and Gogra, on the plains covered with thick grass about two feet high. I have never seen this Harrier far away from grass jungles, where it appears to replace the two preceding species, although they are now and then seen there also.

16. POLIORNIS TEESA.

Very common on sandy plains; seldom seen among trees. This Hawk remains throughout the year; but I did not find its nest. When disturbed, it flies generally quite close to the ground, and utters a low plaintive cry, seldom going further than a hundred yards before settling again. It feeds on beetles and insects. The irides are of a light-red colour.

17. ACCIPITER NISUS. (Sparrow-hawk.)

Occurred at Alumbagh in January 1858.

18. MICRONISUS BADIUS.

A specimen, killed at Newabgunge in September 1858, is in the Norwich Museum; it is not an uncommon bird.

19. AQUILA NÆVIOIDES. (Tawny Eagle.)

Abundant on sandy plains, especially those frequented by the Antelope (*Antilope cervicapra*): and occasionally seen near cantonments in company with the Neophron and Govinda Kite. I once saw it sharing some carrion with one of the Red-headed Vultures (*Otogyps calvus*). Though this Eagle is resident, I could not obtain a nest. I imagine that it breeds during the hottest part of the year, when it is impossible to go bird-nesting. Owing to the strong habits of deceitfulness of the natives, no reliance can be placed upon them, if sent out to get eggs. They invariably try to deceive; but their European brethren in trade are often nearly as bad; so that the Asiatic must not come in for all the black paint.

20. AQUILA NÆVIA. (Spotted Eagle.)

Occasionally found in the same localities as the preceding species: only once observed in the spotted plumage, in February 1859.

21. ICTINAËTUS MALAYENSIS. (Black Eagle.)

I killed a fine specimen of this bird on the 20th of April, 1859, near Ramgurh, between Nynee Tal and Almorah, in Kumaon. I noticed one other at an elevation of nearly 10,000 feet, about fifteen or twenty miles from Milum, one of the passes into Thibet. This Eagle cannot be a very common bird in Kumaon, as during two months there I only saw these two. The specimen which I obtained, which is now in the Norwich Museum, had the inside of the mouth and throat covered with small pieces of egg-shell, apparently that of the Cheer (*Phasianus wallichii*), or Chickore (*Caccabis chukar*); hence, of course, Jerdon's synonym "*ovivorus*." Is not this bird nearly allied to the Honey Buzzards? The European species (*Pernis apivora*) has been known to feed, in a wild state, on Thrushes' eggs (Zool. p. 3707), and the Marsh Harrier (*Circus æruginosus*) has also been found to do the same. The irides of the Black Eagle are yellow.

22. Buteo rufinus. (Long-legged Buzzard.)

Common near wooded jungle. I took four large rats (swallowed whole) out of the stomach of one. The irides of this Buzzard are golden-coloured.

23. Pandion haliaëtus. (Osprey.)

Not observed in Oudh, but doubtless occurs there, as it is "common throughout India in all suitable localities" according to Mr. Blyth's Catalogue. I obtained it at Nynee Tal, at an elevation of about 5500 feet, in June 1859, when it was frequently seen there. The shikarees, or native hunters, told me that it nested at Bheem Tal, another mountain lake at a lower elevation, fifteen miles from Nynee Tal.

24. Haliaëtus macei. (Mace's Sea Eagle.)

Irides dark brown. This "Sea" Eagle is very common in Oudh in the cold season, and always seen in the vicinity of rivers and jheels; it makes a very large nest of sticks, on tall trees close to water. I never obtained the eggs myself, though some men of my regiment took the eggs on the 19th of November, 1859, but ate them on the spot, to my intense disgust.

I repeatedly found the young in January and February. There were never more than two, and sometimes only one, in each nest; hence I conclude the number of eggs to be usually two. I brought up three young birds, one of which (pinioned) lived for eighteen months. The other two used to sit on the top of my tent and fly about the camp quite tamely, but they disappeared when the hot weather began to come on. The one pinioned showed, at the time of its death, no signs of the adult plumage. This Eagle, when I have been out shooting, has often carried off ducks and snipes, &c. which I had shot.

I have little doubt that this Eagle is identical with Pallas's Sea Eagle (*H. leucoryphus*), which I saw in the Crimea*. I brought home a sternum from that country, and also one from Oudh; these are in the Norwich Museum. At the request of Mr. Gurney, Mr. Alfred Newton has kindly examined them, and reports as follows: "I have received your note, and also the two sterna from the Norwich Museum, marked respectively 'Oudh' and 'Crimea,' which, according to your wish, I have examined attentively.

"Presuming the *Haliaëtus macei* and the *H. leucoryphus* are birds of the same size, I should suppose, from these specimens, that the Indian was that of a female, and the Crimean that of a male. Comparing them closely, I find that, notwithstanding the general resemblance, there exists a great difference in the proportions of the parts which make up the entire sternal apparatus.

"This may be best shown in the following manner:—

	Oudh specimen. inches.	Crimean specimen. inches.
Entire length of sternal apparatus .	7·27	6·79
Extreme length of sternum proper .	5·15	4·76
Extreme length of coracoid	2·24	3·05

"Thus, while the ratio of the sternum proper in each is within ·04 inch in *direct* proportion to the entire length of the sternal apparatus, the ratio of the coracoids differs by ·6 inch in *inverse* proportion.

"Such a discrepancy as this I have never yet found in the sterna of what I should consider to be examples of the same species; and should the difference be constant, it would go far, in my mind, towards making me believe *H. macei* to be distinct from *H. leucoryphus*; but I do not think one can judge sufficiently from the evidence at present before me.

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* *Vide* 'Zoologist,' vol. xv. p. 5353.

"I do not attach much importance to the fact that the posterior part of the Indian specimen shows two orifices which are wanting in the Crimean example, because I think that the absence of these holes in the Eagles generally indicates a degree of maturity perhaps seldom, though certainly sometimes arrived at. I may add, however, that it is usual for species of the restricted genus *Aquila* to possess these holes, while I never before saw them in any example of *Haliaëtus*."

This report is decidedly in favour of the species being distinct; but I hope some one may soon procure a European specimen, which will decide the matter.

25. HALIASTUR INDUS. (Brahminy Kite.)

Abundant throughout the year, feeding almost entirely on fish and frogs. I did not obtain a nest. This species was common at the Island of Banca in July 1857.

26. MILVUS GOVINDA. (Govinda Kite.)

In the Catalogue of the Birds of the Asiatic Society's Museum this Kite is called *M. ater*—being perhaps confounded with *M. migrans* (the Black Kite), a species which, I believe, has not yet been noticed in India.

The Govinda Kite is found in swarms near all cantonments, particularly those in which the carnivorous European troops are quartered. I have seen certainly more than a hundred on the wing at a time; and the time of the men's meals could always be told by the Kites being in motion and on the *qui vive* for the scraps of meat and bones which are thrown away. They have been known to snatch meat off a plate which a servant was carrying from the cook-house to the mess-room; occasionally they may be seen catching fish in company with the Brahminy Kite and the small Black-bellied Tern (*Sterna javanica*). They nest on tall trees in the cold season; but I did not obtain the eggs—not thinking I should leave the country so suddenly. The Govinda Kite is common in the valleys of Kumaon and at Nynee Tal.

27. OTOGYPS CALVUS. ("King Vulture" of European residents.)

Found throughout the year, and breeds on tall trees at the end of the cold season. An egg, obtained in February 1859, was rather rough on the surface, white in colour, with a few pale-bluish spots on the larger end. This Vulture does not collect in flocks like the two following species, seldom more than two or three being seen together: it was seen occasionally in Kumaon in May and June. I noticed another large Vulture in Kumaon, which I imagine to have been *V. monachus*, but I could not obtain one for examination.

28. GYPS INDICUS.

This species and the next are equally common throughout the year. One was captured in a rather curious way at Alumbagh: the Vulture had made a hole in a dead horse's belly, and poking his head in, was caught before he could extricate himself.

29. GYPS BENGALENSIS.

30. NEOPHRON PERCNOPTERUS. (Egyptian Neophron.)

Found in great numbers near all towns and cantonments. Nests on trees in the cold season. Has the taste, in common with pigs and adjutants (*Leptoptilus argala*), to prefer human excrement to any other food. Was frequently seen in the valleys of Kumaon, and is common at Nynee Tal and Almorah. This Neophron is very seldom, if ever, seen at Calcutta; yet it is common at Aden and at St. Vincent's, one of the Cape de Verd Islands, both places being in a latitude south of Calcutta.

31. GYPAËTOS BARBATUS. (Lammergeyer.)

Common in Kumaon, especially near Almorah and Nynee Tal, where it appears to feed almost exclusively on carrion. All Europeans, not ornithologists, call it the "Golden Eagle,"—probably on account of the reddish tinge on the breast, which is very apparent when the bird is on the wing.

The other species of Diurnal Raptores said to inhabit India are:—

1. *Falco sacer.* Nepal.
2. *F. peregrinus*; or, if the Indian species be distinct, *F. calidus*. India generally.
3. *F. peregrinator.* India generally.
4. *Hypotriorchis severus.* Bengal and Himalayas.

5. *Hierax eutolmos.* Nepal; Darjeeling.
6. *Baza lophotes.* India.
7. *Pernis cristata.* India.
8. *P. apivora.* Nepal?
9. *Hæmatornis cheela.* India generally.
10. *Circus cyaneus.* Nepal.
11. *Astur virgatus.* India generally. Darjeeling.
12. *A. palumbarius.* Nepal.
13. *A. trivirgatus.* Hilly parts of India.
14. *Spizaëtus nipalensis.* Himalayas.
15. *S. limnaëtus.* India generally.
16. *S. kieneri.* Himalayas. Central India.
17. *Eutolmäetus bonellii.* Himalayas.
18. *Aquila chrysaëtos.* Himalayas.
19. *A. imperialis.* Himalayas.
20. *Hieraëtus pennatus.*
21. *Buteo vulgaris?* Nilgiris and Himalayas.
22. *Pontoaëtus ichthyaëtus.* Bengal.
23. *Blagrus leucogaster.* India generally.
24. *Milvus affinis.* India generally.
25. *Vultur monachus.* Himalayas.
26. *Gyps fulvus.* Himalayas.

32. BUBO BENGALENSIS.

Seen in February 1860.

33. ASIO BRACHYOTUS. (Short-eared Owl.)

Very common in the cold season. I have flushed as many as ten at once, in long grass.

34. SCOPS BAKKAMÆNA.

Occasionally seen in the cold season.

35. ATHENE BRAMA.

Very common throughout the year; chiefly resorting to mango topes.

36. STRIX FLAMMEA. (White Owl.)

Assuming the Indian and British species to be identical, this Owl is very common in Oudh; its habits are the same as in England, the cry, or rather screech, being exactly similar.

37. GLAUX JAVANICA.

Obtained in the open country in the cold season.

The other Nocturnal Raptores said to inhabit India, not including the Malay countries, are:—

1. *Bubo orientalis.* Himalaya; S. India.
2. *B. maximus.* Nepal.
3. *B. umbratus.* India generally.
4. *Asio otus.* Nepal?
5. *Scops lempiji.* Himalaya.
6. *Ketupa flavipes.* Himalaya.
7. *K. ceylonensis.* India generally.
8. *Ninox scutellatus.* India generally.
9. *Athene cuculoides.* Himalaya.
10. *A. noctua?* Himalaya.
11. *A. brodiei.* Himalaya.
12. *Syrnium indranee.* India generally.
13. *S. sinense.* India generally.
14. *S. nivicolum.* Himalaya.
15. *Phodilus badius.* Himalaya.

38. BUCEROS BIROSTRIS.

Common in wood jungle during the cold season, especially in the Terai, near the foot of the Nepalese hills.

39. UPUPA EPOPS. (Hoopoe.)

Common throughout the year; nesting in roofs of houses and in chimneys during April and May.

40. HALCYON GURIAL.

I obtained a specimen, in December 1859, at a jheel in a thickly wooded country near Khyreegur; I never noticed it again.

41. HALCYON SMYRNENSIS.

Exceedingly common throughout the year, frequenting jheels more than rivers.

42. CERYLE GUTTATUS.

Frequently seen in Kumaon in May 1859, and was very difficult to approach.

43. Ceryle rudis. ("Dobie Bird.")

Very common in the cold season: is called the "Dobie Bird" from being so often observed near where the "Dobies" or native washermen are at work. It is generally seen hovering in the air like a Kestrel, and, pouncing down like a stone, will go quite under water. The cry of this bird is loud, shrill, and incessantly repeated.

44. Alcedo bengalensis.

This beautiful miniature of our English Kingfisher is not seen nearly so often as the preceding species, or *Halcyon smyrnensis*, and, unlike the latter, prefers running streams. The most splendidly coloured of the Indian Kingfishers, *H. coromanda*, did not come under my notice, and probably is not found in Oudh.

45. Coracias indica. (Indian Roller.)

Called "Blue Jay" by Europeans, and "*Neel Kánt*" (Blue Crow) by the natives. Is seen in great numbers throughout the year, and breeds in roofs of houses and in holes of trees. They perform the same aërial antics as *C. garrula*, but are much more noisy, and very annoying during the breeding-season, in May and June. They make holes for their nests in the thatch of bungalows, and used to create such a disturbance, that I kept a gun ready-loaded for them; but it was labour in vain—no sooner was one pair disposed of than others appeared. This species certainly interbreeds with the more southern and eastern *C. affinis*, as there are specimens in the Calcutta Museum, evidently hybrids. The European *C. garrula* has been killed at Mooltan, and also in Affghanistan.

46. Merops philippinus.

Seen in the hot season, but not in any numbers.

47. Merops viridis. (Green Bee-eater.)

Excessively numerous throughout the year: ten or more may often be seen sitting on the same bush; and on the telegraph wires on the Grand Trunk Road, I once saw, in the early morning, upwards of fifty within twenty yards. In one habit this bird resembles our Spotted Flycatcher (*Muscicapa griseola*): it is incessantly flying a few feet in chase of insects, and settling again on its former perch. When on the wing, its plumage glistening in the sun, it is seen much more to advantage than when at rest. Like theatrical scenery and Eastern cities, it looks best at a distance.

48. GECINUS FLAVINUCHUS.

I killed a specimen of this very handsome Woodpecker on June 12, 1859, on one of the lower hills between Nynee Tal and Kaleedoughee, in Kumaon.

49. BRACHYPTERNUS AURANTIUS.

Common. There were other species of Woodpeckers which I did not identify. Not knowing that I should leave the country so soon, I neglected to keep the specimens obtained, hoping to get better ones.

50. PICUS HIMALAYANUS.

Common in Kumaon.

51. YUNX TORQUILLA. (Wryneck.)

A specimen of this bird was brought alive to me by a native birdcatcher in August 1858.

52. MEGALÆMA VIRENS.

Frequently observed in Kumaon in April, May, and June. It is generally to be seen on the top of some tall tree, uttering its peculiar piercing whistle.

53. MEGALÆMA PHILIPPENSIS.

Noticed only once, near Newabgunge, in November 1858.

54. CUCULUS CANORUS. (Common Cuckoo.)

Occasionally seen, or rather heard, in Oudh. I heard it in August, and shot an immature specimen in October 1859, and again heard it several times in June and July 1860, the thermometer at the time ranging from 95° to 105° in the shade, and a hot wind blowing.

It is a very common bird in Kumaon in April, May, and June, and is known to the hill-men under the name of "*Kupwah*," which, like most native names of birds, is evidently derived from its cry.

55. Eudynamis orientalis.

Common; arriving in April, and frequenting mango topes. The note of this bird is very loud and peculiar; it is often heard throughout the night.

56. Oxylophus coromandus.

Seen in Kumaon in May 1859.

57. Centropus philippensis.

Common in thick jungle; particularly in the bamboo jungle round villages.

A species of *Caprimulgus* was common in Oudh, and also in Kumaon; but I did not identify it. This was also the case with a species of *Acanthylis,* and many other birds.

58. Corvus culminatus.

Exceedingly common in Kumaon, where the next species is not seen.

59. Corvus splendens.

Exceedingly common and impertinent, entering houses, stealing meat, &c., off the table, horridly noisy, and of generally disagreeable habits.

60. Dendrocitta rufa.

Common wherever there are any trees. The note of this bird is a very peculiar whistle, somewhat thus: *Kook-koo-kool-a-lee.*

61. Psilorhinus occipitalis.

This handsome bird is very common in Kumaon.

62. Garrulus gularis.

Common in Kumaon.

63. Garrulax leucolophus.

Frequently seen in the valleys of Kumaon, in small flocks of seven or eight, in May 1859: is a conspicuous bird from its white head.

64. Garrulax albogularis.

Found in Kumaon in May 1859.

65. Gracula intermedia.

Seen in Kumaon in May.

66. **Acridotheres tristis.** (The Common Myna of Oudh.) Found throughout the year. Nests during the rains in holes of trees and in the roofs of houses. The young become very tame, and will follow the person who feeds them.

67. **Sturnus contra.** (Pied Myna.) Common throughout the year.

68. **Sturnus vulgaris.** (Starling.) Found in immense flocks in January and February; generally seen in company with *Pastor roseus,* amongst cattle.

69. **Sturnia pagodarum.** Not so common as *Sturnus contra,* but fluctuates in number very much.

70. **Pastor roseus.** (Rose-coloured Pastor.) Common in flocks in January and February. All the specimens which I examined were of a much paler rose-colour than those which I have seen in the Crimea, where it was very common in May and June.

71. **Passer indicus.** Common: resembling exactly in habits our *P. domesticus.* Nesting in May and June. The Indian species is lighter in colour than ours, as regards the females and immature males; but I have seen English specimens quite as light. The adult male is redder on the back.

72. **Petronia flavicollis.** Common in the rainy and cold seasons.

73. **Calandrella brachydactyla.** (Short-toed Lark.) Exceedingly numerous: is caught in nets by the natives and sold to Europeans, to whom it is generally known by the name of "Ortolan."

There were one or two species of *Anthus* which I did not identify.

74. **Galerida cristata.** (Crested Lark.) Common.

75. **Motacilla maderaspatensis.** Common during the cold season.

76. MOTACILLA BOARULA. (Grey Wagtail.)

Seen in the cold season.

77. BUDYTES VIRIDIS.

Very common in marshes during the cold season.

78. MALACOCERCUS BENGALENSIS.

Common throughout the year.

79. CHRYSOMMA HYPOLEUCUM.

One specimen was brought to me alive in August 1858.

80. LANIUS LAHTORA.

Occasionally noticed.

81. LANIUS HARDWICKII.

Very common.

82. ENICURUS MACULATUS.

Seen in Kumaon in April 1859.

I also shot a species of Dipper, probably *Cinclus asiaticus*; but the skin was accidentally destroyed before I could identify it.

83. MYIOPHONUS TEMMINCKII.

Common in Kumaon in May 1859, and rather solitary in its habits.

84. TURDUS VISCIVORUS. (Missel Thrush.)

Common in Kumaon, though sometimes considered to be a distinct species (*T. hodgsonii*).

85. MERULA BOULBOUL.

Common in Kumaon in May. I observed a flock of eight or ten in the Terai jungle near Khyreegur, Oudh, in December 1859.

86. CYANECULA SUECICA. (Indian Blue-throated Warbler.)

Common in the hot season. I never saw the white-spotted species in India.

87. RUTICILLA LEUCOCEPHALA.

Extremely common in Kumaon. I never observed this bird except close to streams, and generally sitting on some stone in the midst of a torrent: I never saw it perch on a bush or tree.

Another species, probably *R. rufiventris,* was very common in Oudh throughout the year, frequenting bushy jungle.

88. Stoparola melanops. (Blue Fly-catcher.)

Common near Nynee Tal. Not seen in Oudh.

89. Certhia himalayana.

Seen in Kumaon.

90. Hirundo rustica.
91. Hirundo urbica. } Common in the cold season.
92. Hirundo sinensis.

93. Tchitrea paradisea. (Paradise Fly-catcher.)

Common in Kumaon in May 1859. Not observed in Oudh.

94. Leucocirca albofrontata.

Common throughout the year: generally seen in mango topes. A species of Bulbul (*Pycnonotus*) was common both in Oudh and Kumaon, but I did not identify it.

95. Oriolus kundoo.

Common in the hot season, frequenting mango topes. I did not see *O. melanocephalus* in Oudh, but I have seen a specimen from Allahabad.

96. Treron chlorogaster.

Common in Oudh throughout the year.

97. Sphenocercus cantillans.

Found in Kumaon wherever there were trees. Both this species and the preceding are excellent eating.

98. Alsocomus hodgsonii.

Frequently seen in Kumaon in April and May: at that time some nested in inaccessible cliffs near Moonsheyaree, about 70 miles from Almorah.

Two species of *Columba* are common in Oudh: one very much like the Stock Dove, *Columba œnas,* and the other resembling the Rock Dove, *C. livia,* except that it settles on trees. The latter is not found west of the rivers Gogra and Choka. I unluckily did not identify these two species.

99. TURTUR RISORIUS.

Common throughout the year in Oudh, and was equally numerous in the valleys of Kumaon in April, May, and June 1859.

100. TURTUR SURATENSIS.

Abundant throughout the year. A pair nested in my garden at Seetapore in May 1860. The nest and eggs resembled those of our British *T. auritus*, only, of course, being diminished in size. This species of Turtle Dove and the next are equally numerous in villages and wild unfrequented jungle; but *T. risorius* and *T. orientalis* are much less familiar birds, never entering villages, and are much wilder.

101. T. SENEGALENSIS.

This beautiful little Dove is exceedingly common throughout the year.

102. T. ORIENTALIS.

Common during the cold season.

103. PAVO CRISTATUS. (Pea-fowl.)

Found in numbers wherever there is any woody jungle: breeds during the rainy season. The male bird begins to lose his train in September, and does not fully regain it till March or April. The Pea-fowl remains during the heat of the day in the depths of the jungle, and goes to the fields at the edges to feed morning and evening: the cock bird in the breeding-time may be heard calling throughout the night. The number of Pea-fowl in the Terai jungles near Khyreegur is wonderful; they are much tamer there than in any other part of Oudh. The young are very difficult to rear—at least I could not succeed; they lived for six months, but then pined off. I saw some splendidly-coloured hybrids in Calcutta between this bird and the Malayan Pea-fowl, *P. muticus*.

104. CERIORNIS SATYRA. (Lŏŏnghee.)

Found in Kumaon, on the lofty hills near the snows.

105. GALLUS FERRUGINEUS. (Jungle-fowl.)

Common in the Terai jungles; not observed in Central or Western Oudh.

106. EUPLOCOMUS ALBOCRISTATUS. (Kallidge Pheasant.)
Common in Kumaon in the lower hills and in valleys.

107. PUCRASIA MACROLOPHA. (Kokloss.)
Common in Kumaon, at a higher elevation than the Kallidge Pheasant, which is replaced in its turn by the Cheer at a still greater height.

108. PHASIANUS WALLICHII. (Cheer.)
Also called by Europeans the "Golden Pheasant." Common in Kumaon: nesting in May.

109. LOPHOPHORUS IMPEYANUS. (Monâl.)
Found in great numbers on the higher hills in Kumaon, and seems to keep just at the edge of the snow. It is at first a difficult bird to shoot, flying downhill, as all the Himalayan Pheasants do, at a most tremendous rate; a little practice, however, will soon enable one to kill them; but at the time of year I saw them, I only shot two or three, as they were beginning to lay. The flesh of the Monâl in May was not very good—nothing equal to our English pheasant; but the time of year might have caused this. The best-flavoured Himalayan Pheasants are the Cheer and Kokloss, according to the judgment of confirmed epicures. The Monâl, in England, is, I see, called the Impeyan: why not retain its native name of Monâl, which is certainly shorter, and possibly less of a mouthful?

110. PTEROCLES ARENARIUS. (Big Sand Grouse.)
Two or three large flocks were seen near Hurdue in January 1860, and many killed. Both the species of the Indian Sand Grouse which I have tasted are uneatable, and in this respect certainly tend to confirm what the natives say, "that they live upon sand."

111. PTEROCLES EXUSTUS. (Common Sand Grouse.)
Very common on sandy plains, from January to July inclusive. I found two eggs in June, both addled. There was no nest, the eggs being merely laid on the bare sand. They very closely resembled, in size, colour, and markings, the eggs of *Caprimulgus europæus.* There were no trees or bushes within two miles of the spot; if there had been, I should have referred the eggs

to some species of Goatsucker, from their appearance. All the Indian Sand Grouse are indiscriminately called "Rock-Pigeons" by Europeans.

112. Francolinus vulgaris. (Black Partridge.)

This very handsome Partridge is found in great numbers in all grass jungle near water, and is particularly numerous on the banks of the Gogra, Choka, and other large rivers. Good sport is to be had with them in November, in the *huldee* or turmeric fields. This Partridge was common in Kumaon in April, May, and June; its call was to be heard wherever there was any cultivation.

113. Caccabis chukar. (Chickore.)

Common in Kumaon on bare and rocky hill-sides: is very common at a place called Jullut or Moonsheyaree, seven days' march from Almorah. The flesh of the Chickore is considered good. The eggs, brought to me in May, resembled those of *Perdix cinerea,* not having any spots or markings like those of *Caccabis rufa.*

114. Perdix ponticeriana. (Grey Partridge.)

Common throughout the year: breeds in July and August: has acquired the unenviable name of "Dung-bird," probably from feeding on the beetles and insects which feed on the refuse of camps. Its flesh is dry and scarcely eatable, being a degree worse than that of the Black Partridge. Both the Grey and Black Partridge will settle on trees when flushed, though the latter very seldom does so.

115. Arboricola torqueola. (Peurah.)

Abundant in Kumaon, in the woody and more elevated ranges. Is easily decoyed within shot by imitating its whistle, which resembles somewhat the words "*poor boy*" two or three times repeated.

116. Perdicula asiatica.

Common in jungle: rather difficult to flush.

117. Coturnix vulgaris. (Common Quail.)

Exceedingly numerous during the cold and first part of the hot season.

118. C. COROMANDELICA. (Rain Quail.)

Common during the rainy season.

A species of *Turnix* is common in Oudh in the cold season, but I did not retain a specimen for identification.

119. SYPHEOTIDES BENGALENSIS. (Florican of Bengal.)

Exceedingly local, and then not numerous: never found but in grass jungle: to kill eight in a day in Oudh would be a good bag. This Florican well deserves the synonym "*deliciosa*."

A large species of Bustard is sometimes seen in Oudh, particularly at a place called Jallalnŭgger, on the Goomtee; I never could obtain a specimen, but think it must have been *Eupodotis edwardsii.*

120. SYPHEOTIDES AURITUS. (Leek Florican.)

Occurred near Seetapore in June 1860.

121. GLAREOLA ORIENTALIS.

Seen at Alumbagh in January 1858.

122. CURSORIUS COROMANDELICUS.

Found throughout the year on sandy plains; generally in pairs.

123. ESACUS RECURVIROSTRIS.

Found in small flocks on the large rivers during the cold season.

124. ŒDICNEMUS CREPITANS. (Norfolk Plover.)

Common throughout the year in thin, low, woody jungle. Nests in July.

125. HOPLOPTERUS VENTRALIS.

Very common on the sandy banks and shores of the Gogra and Choka: is generally seen near the Crocodiles and Gavials which swarm in those rivers; I have even seen it sitting on their backs. The notes of this Plover and the two next species are very loud, and closely resemble one another; when on the wing, in particular, they are very noisy.

126. SARCIOPHORUS BILOBUS.

Found in small numbers throughout the year in open country.

127. LOBIVANELLUS GOENSIS.

Exceedingly numerous throughout the year; nesting in June. I saw this bird in Kumaon, some fifty miles in the interior of the hill-ranges, on the river Surgoo. From its noisy cry, this handsome Plover is nicknamed the "Didn't you-do-it" Plover by Europeans, its cry resembling somewhat those words. It is called *Tӯtērēē* by the natives, a name also applied to the preceding species.

128. Lobivanellus cinereus.

Abundant in the cold season about swamps and jheels; seen generally in lots of seven or eight.

129. Vanellus cristatus. (Peewit.)

Common, in large flocks, during the cold season.

130. Charadrius virginicus. (Long-legged Golden Plover.)

Found in flocks on the banks of the Gogra and Choka, and occasionally on plains some distance from those rivers. Of the numerous representatives of the family of *Charadriidæ* found in Oudh, this is the only one worth eating, rivalling our *C. pluvialis* in its excellence.

131. Chettusia gregaria. (Keptuscka or Cawnpore Sandpiper.)

Exceedingly common on open sandy plains in January, February, and March. Never seen alone, but in flocks of from six to upwards of fifty. When on the ground, at first sight they appear very like the Golden Plover; but upon taking wing, they resemble *Sarciophorus bilobus* or *Lobivanellus cinereus*, showing a great deal of white in the wings, but flying close to the ground, unlike the other Plovers.

132. Hiaticula cantiana. (Kentish Plover.)

Seen near the Choka in the cold season of 1858–59. Two other species of *Hiaticula* are common in Oudh, but I did not identify them.

133. Himantopus candidus. (Black-winged Stilt.)

Exceedingly common during the cold season; arrives in small numbers in September; seen once or twice in August. Is generally observed in small flocks, wading about the edges of jheels, and picking in the water amongst the mud and weeds.

134. Totanus glottis. (Greenshank.)

Seen singly and in flocks of up to thirty in number; is most numerous during the cold season, but is occasionally seen during every month throughout the year.

135. Totanus stagnatilis. (Yellow-legged Sandpiper.)

Very common in the cold season. In habits resembles *Actitis glareola,* being more of a Marsh Sandpiper than *A. ochropus* or *A. hypoleucos,* both of which are found on the banks of rivers; the Common Sandpiper being seldom seen on muddy marshes.

136. Totanus fuscus. (Dusky Redshank.)

Frequently seen in small flocks during the cold season: not noticed in the summer plumage.

137. Totanus calidris. (Redshank.)

Exceedingly numerous during the cold season. This bird has a curious way of feeding, which I often noticed: a flock of perhaps thirty or forty will form a sort of oblique line, each one a little in rear of the other, and advance across a shallow jheel, all with their heads down half under the water, moving them from right to left with great rapidity. The noise they make in the water is plainly audible. Probably they feed in this way in other countries, but in India they are so tame as to allow a very near approach without alarm.

The jheels in Oudh, except in the Terai, are always very shallow, seldom more than two feet deep, and not often of that depth. In the Terai, however, they are very deep, and are there greatly inhabited by crocodiles (*Crocodilus palustris*). When there in November and December, scarcely any waders were to be seen, except on the rivers, and very few Ducks. Whether the crocodiles have anything to do with this, I do not know; but if ever one shot a duck or any bird that fell into the water, the natives disliked going in to retrieve them, and needed rather forcible persuasion to make them do so, though I do not think that the crocodiles would hurt them; certainly the "sharp-nosed" Gavial would not. The shallow jheels are filled by the rains, and become perfectly dry by February or March, partly from evaporation, but more from irrigation. When a jheel is very nearly dry, there are more waders than when it is full: as a rule, the shallower the water is the better, as long as there is some. The fishes in these places must bury themselves in the mud, as directly the rains begin to fill them, they appear, though there may have been no water for three or four months.

138. ACTITIS GLAREOLA. (Wood Sandpiper.)

Excessively common in the cold season.

139. ACTITIS OCHROPUS. (Green Sandpiper.)

Extremely common in the cold season; rarely seen in May, June, July, and August: is by far the most common Sandpiper in Oudh; the Wood Sandpiper ranking next in numbers. The Green Sandpiper is the only one I noticed in Kumaon, where I twice saw and shot it in May, on a small stream near Almorah. In Oudh, every little puddle by the roadside, and every pond outside the villages, has one or more of these birds running at the edge, and they are so tame that you can walk within a yard of them.

140. ACTITIS HYPOLEUCOS. (Common Sandpiper.)

Very common in the cold season.

141. LIMOSA ÆGOCEPHALA. (Black-tailed Godwit.)

Found in large flocks in the cold season.

The Bar-tailed Godwit, *L. lapponica*, has, I believe, occurred in Nepal. *Terekia cinerea* is common in India; but I never saw one, which is rather singular, as I paid more attention to the Grallatores than to any other order.

142. NUMENIUS ARCUATUS. (Curlew.)

Found during the cold season in very large flocks on the sand-banks of the rivers Gogra and Choka.

143. NUMENIUS PHÆOPUS. (Whimbrel.)

Three seen at a half-dried jheel near Hurdui, in February 1859; the only time that I noticed it.

144. TRINGA CANUTUS. (Knot.)

Seen near Cawnpore in September.

145. TRINGA SUBARQUATA. (Pigmy Curlew.)

Observed occasionally in the cold season.

146. TRINGA CINCLUS. (Dunlin.)

Seen in the cold season in company with the two next species, but was not common.

147. TRINGA MINUTA. (Little Stint.)
148. TRINGA TEMMINCKII. (Temminck's Stint.)
} Very common in flocks during the cold season.

149. PHILOMACHUS PUGNAX. (Ruff.)

Found in immense flocks in the cold season; I have seen some flocks of certainly not less than from three to four hundred on the rice-stubbles near Khyreegur; those which I shot were full of rice, and were well worth shooting for the table. I never saw one with a ruff; but Mr. Blyth has kept them alive in Calcutta till the ruff appeared.

150. SCOLOPAX RUSTICOLA. (Woodcock.)

Common in Kumaon, resorting to the lower hills and valleys in the cold season. In May, I have seen a Woodcock and Monâl on the wing at the same time, and suppose that they breed on the high ranges of the Himalayas. In December, I imagine that I flushed a Woodcock near Khyreegur, in Oudh; but not being able to get a shot at him, or even mark him down, I cannot be certain that it was one.

151. GALLINAGO NEMORICOLA.

I saw several couples of this fine Snipe at Moonsheyaree, in Kumaon, at an elevation of about 6000 or 7000 feet, in May 1859. The shikarees had no distinctive name for the bird, though they knew it well by sight. Those I found were in little rushy patches of bog on the sides of the hills, never on streams.

152. GALLINAGO STENURA. (Pin-tailed Snipe.)

Common at the commencement of the cold season.

153. GALLINAGO SCOLOPACINA. (Common Snipe.)

Found in great numbers; arriving in Oudh in October, and departing at the end of March. At Nimkar, on the Goomtee, on the 8th of November, I bagged thirty couples of Snipe in four hours, about five couples of which were Jacksnipes. Is called "*Chahah*" by the natives of Oudh.

154. GALLINAGO GALLINULA. (Jacksnipe.)

Found in the cold season wherever the Common Snipe is found, but not in such numbers.

155. RHYNCHÆA BENGALENSIS. (Painted Snipe.)

Found in small numbers throughout the year. Like the Jacksnipe, this bird will not rise till nearly trodden upon, and then only flies a few yards.

156. METOPIDIUS INDICUS.

Very common in the rainy season; frequenting weedy, grassy jheels.

157. HYDROPHASIANUS CHIRURGUS.

Very common in the rainy season; arrives in June, and last seen in September. When flying, which it does very strongly and fast, its screams may be heard a long way. This handsome Jacana is included in Mr. Gould's Century of Birds from the *Himalaya*. It is certainly rare in Kumaon; I never saw it there during the two hottest months in the year; and there is no locality there adapted to its habits—not even the mountain lakes.

158. GRUS ANTIGONE. (Sâras Crane.)

Found in great numbers in the cold season, generally in pairs, though sometimes in flocks, whereas the Common and Demoiselle Cranes are always seen in flocks. Many Sâras remain to breed in Oudh, forming an immense nest of grass and rushes in the centre of large jheels. The number of eggs, which are laid in June, is generally two: some eggs are pure white; others white, spotted with red at the larger end. The young birds are easily reared by hand, and become very tame and attached to the person who feeds them, following him like a dog. They are very amusing birds, going through the most grotesque dances and antics, and are well worth keeping in captivity. One which I kept, when bread and milk was given to him, would take the bread out of the milk, and wash it in his pan of water before eating it. This bird, which was taken out of the King's Palace at Lucknow, was very fierce towards strangers and dogs, especially if they were afraid of him: he was very noisy, the only bad habit he possessed. The natives say that if a Sâras be killed, its mate will never pair again; certainly I have heard the survivor calling all night for its mate, and since then I never would shoot them.

The flesh somewhat resembles that of a Goose; it makes capital soup, and the liver is considered rather a delicacy by some people.

159. GRUS LEUCOGERANOS. (White Crane.)

Though I never succeeded in obtaining a specimen of this Crane, I saw it on four different occasions, at Sandee in February, and at Hilgee, on the river Choka, in December 1859. The first time there were three together, two white, and one dusky-coloured (the colour of an immature Hooper)—no doubt the two old birds and their young. I tried to get a shot at them in vain, they were so excessively wild, which is not the case with the Sâras; though the Common and Demoiselle Cranes are in India very difficult to approach, the only way of shooting them being with a rifle.

160. GRUS CINEREA. (Common Crane.)

Large flocks of the Common Crane appear during the cold season, and are chiefly found near the rivers Choka and Kurnalli, feeding on the rice-stubbles. This and the next species are much prized by European sportsmen under the name of "Courlan."

161. ANTHROPOIDES VIRGO. (Demoiselle Crane.)

Occurs in immense flocks during the cold season, and are found in the same localities as *Grus cinerea*. At Sirsa Ghat, on the Choka, flocks of several hundreds may be seen on the wing at once; their cry can be heard when they are out of sight.

162. FALCINELLUS IGNEUS. (Glossy Ibis.) "*Kowari*" of natives: "Black Curlew" of European sportsmen.

Common during the cold season; generally seen in flocks. I have repeatedly seen this and the next two species of Ibis settle on trees.

163. GERONTICUS PAPILLOSUS. ("King Curlew" of Europeans.)

Frequently seen in the cold season.

164. THRESCIORNIS MELANOCEPHALUS. ("White Curlew" of Europeans.)

Common throughout the year.

165. Platalea leucorodia. (White Spoonbill.)

Common in flocks at the end of the cold season.

166. Anastomus oscitans.

Common throughout the year. At a place named Kŭpser, on the river Kutna, a branch of the Goomtee, this bird breeds in a large colony on two or three tall trees growing on the banks of the river. The nests are immense stacks, or rather platforms of sticks, one above the other, several pairs nesting on each platform, without any apparent separation of the eggs, which, on the 26th of June, were hard set on and of a chalky-white colour, smaller than, but about the same shape as the egg of *Ardea cinerea*. I left India shortly after finding this place, or I should have got some young birds to bring up. The immature bird is of an ashy-grey colour on those parts of the plumage which when adult are white. I have eaten the immature bird, and found it tolerably good.

167. Mycteria australis. (Green-headed Jabiru.)

Frequently observed throughout the year. Generally they are solitary birds, more than three being seldom seen together, and very wary. Probably they breed in Oudh, but I never could find out where they nested.

168. Ciconia alba. (White Stork.)

Common, especially in the cold season; generally seen in flocks.

169. Ciconia leucocephala.

Common in the cold season: is not so gregarious as the White Stork.

170. Leptoptilus argala. (Adjutant.)

Common throughout the year, though it is thought to be migratory.

171. Ardea cinerea. (Common Heron.)

Numerous during the cold season. That handsome Heron, *A. goliath*, is found in Bengal and Nepal, but I never observed it in Oudh.

172. Ardea purpurea. (Purple Heron.)

Exceedingly numerous during the cold season. This Heron has a good deal of the habits of the Bittern, skulking in rushes, &c. I have repeatedly seen it in India, at the Cape, and in the Crimea, but never saw it in the open, like *Ardea cinerea,* except when flushed out of rushes; then it will sometimes settle on dry land, much in the manner of the Night Heron.

173. HERODIAS ALBA. (Great Egret.)

Common from August to March inclusive, and probably found throughout the year. Attempts have been made to distinguish the different species of Egret by the colour of the bill; but the colour varies according to age and the time of year, and specimens may be often obtained with the bill half black, half yellow: the only way of distinguishing them is by the crests, back and breast plumes, and by the size of the birds when not in the breeding plumage.

174. HERODIAS INTERMEDIA.

More common than the preceding species, and observed throughout the year.

175. HERODIAS GARZETTA. (Little Egret.)

Common throughout the year. I kept one alive some time, feeding it on meat.

176. HERODIAS MELANOPUS.

Common, and, like the preceding species, often seen among cattle. This Egret is the smallest of the four; and the breast plumes in the breeding-plumage are few in number, but thick in texture, and scattered down the neck—not springing from one place as in *H. garzetta.*

177. HERODIAS BUBULCUS. (Buff-backed Heron.)

Excessively common during the rainy season; always seen amongst cattle. I have seen a buffalo walking along with three or four of these birds or *H. intermedia* sitting on his back, reminding one of an itinerant vendor of plaster-of-Paris images.

178. ARDEOLA LEUCOPTERA. ("Paddy Bird.")

A name also applied to the preceding five species, but especially to this one, which is very common throughout the year.

179. NYCTICORAX GRISEUS. (Night Heron.)

Seen in small numbers throughout the year, and is rather wary.

180. Botaurus stellaris. (Common Bittern.)

Common in the cold season on the large rushy jheels.

181. Porphyrio poliocephalus.

Very common, especially on rushy jheels and those where bushes grow in the water. This bird can bite very sharply, as I know from personal experience.

182. Porzana phœnicura.

Very common throughout the year; frequenting small ponds and swamps near villages.

183. Porzana maruetta. (Spotted Crake.)

Common in rushy swamps during the cold season.

184. Gallinula chloropus. (Waterhen.)

Common.

185. Fulica atra. (Common Coot.)

Found in great numbers on the large jheels in the cold season. I saw one on the lake at Nynee Tal, Kumaon, about the 1st of June, 1859.

186. Larus ridibundus. (Black-headed Gull.)

Frequently seen in the cold season, but never in summer plumage.

187. Larus minutus. (Little Gull.)

I killed a specimen of this Gull in its winter dress in January 1859, near Jehangirabad; it was exceedingly tame, allowing me to approach within two or three yards.

188. Rhynchops albicollis. ("Scissors-bill.")

Common in the cold season in the vicinity of the Gogra and Choka, on the sand-banks of which rivers large flocks are seen sitting in the daytime. I think this bird must feed at night, as I never saw it doing so till just towards dusk, when it was often to be seen skimming along close to the water, every now and then dipping in its curiously constructed beak.

189. Hydrochelidon indica. (Whiskered Tern.)

Common in the cold season.

190. Sterna hirundo. (Common Tern.)

Occasionally seen.

191. S. JAVANICA.

Very common.

192. S. MINUTA. (Lesser Tern.)

Seen once or twice on the Gogra; always (like all the Terns) in the cold season.

193. PELECANUS JAVANICUS.

Very common on large jheels and on rivers in the rainy seasons, and settles on trees. Most of those which I saw were in the immature plumage.

194. GRACULUS PYGMÆUS.

Extremely numerous on rivers, particularly during the cold season.

195. PLOTUS MELANOGASTER. ("Snake Bird" of Europeans.)

So called from its appearance when swimming, the whole of the body being submerged, and only the snake-like head and neck being seen. This Darter is exceedingly common in some localities during the cold season, preferring rivers and deep jheels. In the Terai I have seen as many as twenty sitting on a dead tree, which was quite white from their dung.

196. ANSER CINEREUS. (Grey-lag Goose.)

Arrives in November, and departs about the end of February; is during that time very common, frequenting large jheels more than rivers, whereas the Barred Goose (*Bernicla indica*) resorts more to rivers, and is not nearly so good a bird for the table as the Grey-lag.

A single specimen of some species of Goose, which, from the description given me, I imagine to have been a Grey-lag, was seen on Nynee Tal in Kumaon, about the beginning of May 1859, probably *en route* from the plains to the cooler regions of the Thibetan lakes.

197. ANSER BRACHYRHYNCHUS. (Pink-footed Goose.)

I saw a specimen of this Goose, killed at Alumbagh in January 1858. According to Mr. Blyth, it has also occurred in the Punjâb.

198. ANSER MINUTUS, Naum. (Little White-fronted Goose.)

On the 24th of October, 1859, near Seetapore, in Oudh, I killed two birds of this species, and saw a third; these are the only ones I noticed. At the time I could not make out what Goose it was, and was unable to find out, till I saw some alive in the Zoological Gardens, Regent's Park. It is probably very rare in India.

199. BERNICLA INDICA. (Barred Goose.)

Exceedingly numerous in the cold season on the large rivers, such as the Gogra, Choka, and Korialla; is seldom seen on jheels, and is scarcely worth shooting for the pot.

200. DENDROCYGNA ARCUATA. ("Tree Duck," "Whistling Teal," and "Rain Teal" of Europeans.)

Appears in great numbers at the commencement of the rainy season, and is then seen in pairs; towards the middle of the cold season they are seen in flocks of eight or ten—probably the old birds and their young. This Duck, when on the wing, has a peculiar whistling cry. It flies very heavily, shows no sport, and its flesh is dry and tasteless. The large species of Rain Teal (*D. major*) I did not observe in Oudh, but doubtless it occurs there.

201. SARCIDIORNIS MELANOTUS.

This curious and handsomely-coloured Duck is not common in Oudh, and when observed was on jheels, not rivers. I saw it in May, June, and July; and once, in November, saw a small flock, all in the sombre plumage of immature males or females. The adult male, with the boss on the beak, I only observed four times. In all the family of *Anatidæ* there is probably no species in which there is such a difference in size between the male and female; the former is nearly double the weight of the latter; when on the wing this difference is very apparent. The boss on the beak varies in size, probably according to the age of the bird; in the plate given in the 'Pl. Enl.' 937, the boss is smaller than most which I have seen. The flesh of this Duck is, unlike that of other Tree Ducks, very good.

202. NETTAPUS COROMANDELICUS.

Very common; arriving about the same time as *D. arcuata*, but departing sooner.

203. CASARCA RUTILA. ("Ruddy Shieldrake.") "Brahminy Duck" of Europeans. "*Chukwa*" of natives; probably so called from its cry.

Very common in the cold season on the large rivers and lakes; seldom seen on the small jheels, except in the vicinity of rivers. Immense flocks, during the day, rest on the sand-banks of rivers, and towards dusk these flocks break up into pairs and disperse in various directions. Should one bird be killed, its mate will not leave the spot, but continue flying round for some time, calling repeatedly. It is a shame to shoot them, as their flesh is proverbial for its dryness and other bad qualities. There is a strange Hindoo legend about the Chukwa, the pith of which is that any person who kills one is for ever after doomed to celibacy.

204. SPATULA CLYPEATA. (Shoveller.)

Very common on the shallow jheels in the cold season, preferring those jheels in which the water is about four or five inches deep.

205. ANAS BOSCHAS. (Wild Duck.)

Numerous in some localities during January and February.

206. ANAS PŒCILORHYNCHA. ("Big Duck" of European sportsmen.)

Exceedingly common in the cold season; occasionally noticed in June, July, and August; generally seen in pairs, or in parties of from three to eight in number, and is more partial to rivers and deep jheels than the shallow muddy jheels. This Duck and the Shoveller are seldom seen on the same piece of water; the latter always seeking its food in very shallow water, as also do the Common Teal and the Pintail, both of which I have often killed at the same shot. With the exception of *A. boschas* and the next species, this Duck is the most wary of any,—Teal, Gadwall, and the Pochards being the tamest. There is scarcely any difference between the note of *A. boschas* and this Duck when alarmed.

207. ANAS CARYOPHYLLACEA. (Pink-headed Duck.)

Three times seen towards the end of the rainy season—twice in small flocks of seven or eight, and a single bird—and is, as fa as I have seen, excessively wary. The pink head is very apparent when on the wing, contrasting with the dark plumage of the body: immature specimens are not so pink on the head and neck as the adult.

208. Dafila acuta. (Pintail.)
Very common in the cold season in large flocks.

209. Mareca penelope. (Wigeon.)
Seen in small numbers towards the end of the cold season.

210. Querquedula crecca. (Teal.)
Extremely numerous; arriving about the end of September. I know an instance of twenty-three having been bagged out of a flock. Three barrels were fired, and a single one was killed with the fourth barrel. A great haul for the pot this, especially when one is hard up for good food.

211. Querquedula circia. (Garganey.)
Frequently seen in the cold season; exceedingly common in February and March; I caught some young, half-fledged, in the month of September. It is, I suppose, an unsolved problem where the wild-fowl, waders, &c., which resort to the plains of India in the cold season, go to breed: to the Lakes of Thibet, and the river Yaroo, perhaps. The only wild-fowl which I noticed in Kumaon, on Nynee Tal, were—a single Goose, some Gadwalls, Shovellers, Teals and Garganeys, and a solitary Coot (*Fulica atra*); I also once saw a large Grebe, probably *Podiceps cristata.* These birds only remained on the lake for a day or two; indeed they could not live, the depth of the lake is so great that there can be little food for them, and there are not many weeds except close to the road.

212. Branta rufina. (Red-crested Pochard.)
Exceedingly common in the cold season. Why was the epithet "Whistling" ever applied to this bird? I have seen hundreds, and never once heard a whistle from one. In habits they resemble our Common Pochard.

213. Fuligula ferina. (Common Pochard.)
Occasionally seen in the cold season, but was not common.

214. Fuligula cristata. (Tufted Pochard.)

Seen on the large jheels, in small numbers, during the cold season.

215. Fuligula nyroca. (White-eyed Pochard.)

Extremely numerous in the cold season; and is very good for the table.

216. Mergus castor. (Goosander.)

Seen on Sandee jheel, near Hurdui, in February 1859.

217. Mergus albellus. (Smew.)

Occasionally seen, in January and February, in small flocks of from three to seven.

218. Podiceps cristatus. (Great-crested Grebe.)

Frequently seen on the jheel at Sandee and on other large jheels towards the end of the cold season.

219. Podiceps philippensis. (Dabchick.)

Very common throughout the year, and breeds *during* the rains.

XXIV.—*Notes on the Birds observed about Talien Bay (North China), from June* 21 *to July* 25, 1860. By Robert Swinhoe, of H. M.'s Consular Service.

Before giving my notes and observations on the few birds of the place, it will be necessary to give the reader a brief introduction to the "*natura loci.*" Talien Bay (the Chinese word, by some explanations meaning "girdle," and according to others, "united") is the name applied by the British to a bay in the extreme southerly peninsula of the Province of Leautung, where the expeditionary force rendezvoused previous to their campaign in the Gulf of Pecheli. Whence the name took its origin remains a mystery, as it was perfectly unknown to the natives of the place. The bay measures, from north to south, about 9 miles, and from east to west, about 13 miles. The S.E. and N.W. shores are steep and rocky, the cliffs in some parts rising up perpendicularly from the water. In the N.E. angle and on the W. the land gradually slopes towards the sea and forms a shelving beach. The shores of the bay are very much indented, and form quite a number of subordinate bays. The bay is bounded by two long peninsulas that stretch out like horns from the main land and converge towards the entrance of the harbour. The average breadth of each of these peninsulas may be 4 or 5 miles. The centre of each is occupied by a range of rocky hills consisting of stratified limestone and clay, of what the geologists would call a "metamorphic formation." In these rocks large quantities of granite occur, and the scratches and broad lines on the slabs of softer limestone give plain indications of the grinding influence of giant glaciers during the long-past "glacial period." Water is scarce and chiefly procured from wells, but a few trickling streams may be discovered stealing down the depths of the chasms and ravines that wash the sides of the hills. The villages are mostly small and cluster in chosen spots round streams or wells, but scarce any bear the stamp of later date than 80 or 100 years, judging from the growth of the trees planted in their neighbourhood; for, with the exception of such trees, sylvan vegetation is unknown there, though the hills are covered with verdure and offer a rich gathering to the botanist. You would naturally expect to meet here Mantchurians, considering the province generally marked down as part of Mantchuria; but not so, the natives (who are stout and brawny-looking fellows, though uncouth and boorish) report themselves as colonists from the Chinese provinces of Shantung and Shanse. They live in strongly-built huts composed of stone and mud, with thatched roofs; but the internal economy of their dwellings is fearfully neglected and slovenly, and all kinds of vermin abound. It is a strange fact that these people do not drink *tea*, using instead a decoction of *millet*. Opium, on the contrary, has found its way among them; and not a few have fallen victims to its ravages. Their language is a vulgar patois of the court dialect. Bearded corn, coarse millet, maize, beans, potatoes (the true English potatoe is eaten there, boiled as a delicacy with sugar), form the chief crops in summer. The climate even at this late season was never hot, a nice fresh breeze always blowing from the sea; and such delightful evenings! Strange to say, birds were scarce; for what particular reasons I could not ascertain, as insects and vegetable food were both abundant, and their enemies, in the shape of Hawks or beasts of prey, by no means common.

1. MILVUS GOVINDA, Sykes.

Even here this bird is met with, though in no great numbers, soaring about in the neighbourhood of villages and over junks in the harbour, ever prowling for its carrion prey. I shot a male, and found it answering in most respects to the southern bird, though the bill is stronger and thicker, and the legs more robust. The culmen of the cere, when the specimen was fresh, was yellow, the rest bluish. Legs bluish, with black claws. Compared with some skins of the Indian bird sent me by Mr. Blyth, the Chinese race is much larger and stronger, with heavier legs and stouter claws, and a much darker tinge of plumage; but I think there can be little doubt that they are the same species, the Chinese race being somewhat more ennobled in appearance by the cooler temperature in these parts.

2. ERYTHROPUS VESPERTINUS, Linn.

This handsome little bird-slayer was not unfrequently met with flying along overhead or hovering poised in air. Judging from the contents of the stomachs of two I procured, I should say it committed considerable havoc among the Larks and other field-birds. It certainly caused considerable consternation wherever it appeared among them. I had an opportunity of observing the nest of this species twice; one was placed amongst the topmost boughs of a willow, the other in the leafy foliage of some umbrageous tree. The nests were large and round, and built of sticks, resembling somewhat those of the Magpie. When the old birds visited the nest, the young set up a chattering cry.

Old male. Length 11 in., wing $9\frac{1}{10}$, tail 5. Cere, skin round the eye, bright orange-red, with a tinge of yellow-orange running into the beak. Apical third of upper mandible bluish black, somewhat light in tint. Iris deep hazel. Legs bright orange, with yellowish claws.

The young were balls of white down with bluish bills. The cere and skin round the eyes were of a pale yellow, as also were the legs and claws. The irides were brown.

3. BUBO MAXIMUS.

I twice saw this fine Owl. Once we were on an expedition, when the whole party stopped to see one of this giant species sitting on a rock some way up a hill, and trying to ward off the attacks of a pair of Red-legged Falcons, who were hovering over and darting at him on each side. At last he flew to the other side of the hill to try and take refuge from his small assailants; but they followed after and continued their persecution until he hid himself under a rock. At another time, when I was clambering over the hills that skirt the harbour between "Pearl Bay" and "Odin Bay," I suddenly turned a corner and came close in view of a very fine specimen, which at once rose respectfully and flapped over the valley out of view. These birds, I presume, banquet off the Hares (*Lepus sinensis*) that scantily people the surrounding country.

4. CYPSELUS VITTATUS, Jardine.

This Swift has a long sweep of coast for his peregrinations. At Amoy we have his company in the spring, while the weather remains rainy and unsettled; we found him in the commencement of June breeding on the Lam-yit islands; and later, towards the close of that month, we find him again, a thousand miles north, sporting about in the clear atmosphere of Salienwan. As the season advances and the incubatory duties are finally concluded, he betakes himself south again for the winter.

5. HIRUNDO RUSTICA, Linn.

I think we must drop the *gutturalis* of Scopoli and call this bird by its old familiar name; for it can certainly be no other than our English acquaintance, though somewhat smaller in size. It differs nothing in point of colouring, and in habits no more than the change of situation would lead one to expect. This species was plentiful enough among the villages.

6. UPUPA EPOPS, Linn.

In a willow grove a party of these birds, probably consisting of a family group, had taken up their quarters, and from this spot they used to make their little excursions into the neighbouring open land, skimming along with long undulating flight. Sometimes they would toy and gambol with one another in the air, occasionally tumbling several feet downwards before they could recover themselves. The note they mostly uttered was a kind of hissing sound.

7. Lanius lucionensis, Strickland.

Male shot. Length 8 in., wing 3½, tail 3½. Bill black; legs and claws leaden blue.

This bird apparently passes the summer in the north, as on our first arrival it was much more common than it subsequently became. Still later, in the plains of the Peiho we did not meet with them at all; they had probably migrated southwards.

8. Motacilla lugubris.

A pied Wagtail, I should fancy of this species.

9. Passer montanus, Linn.

This is here the domestic Sparrow as in the south, and is found as numerous and as noisy as ever.

10. Emberiza rustica, Pall.

I frequently met with this Bunting, which appeared to be the only species. Its choice habitats were on the grass-covered sides of hills, where several together might be seen searching about on the ground for small seeds and insects. Occasionally flitting on the top of a rock, a male would continue to pour out a flow of rich notes, wild in their strain, but sweet and melodious. Its twittering call-note is not unlike that of the *Robin*.

Male. Upper mandible bluish black, lower pale bluish; legs light clay colour, with blackish claws.

I send four individuals of this species. They are all adult, and answer in most respects to the description in the 'Fauna Japonica;' but mine have the top of the head deep reddish brown, instead of "noir tirant au brun-roux."

11. Alauda brachydactyla, Temminck.

I have compared the northern skins with some from India, and can discover no tangible difference. It is a very common species among the fields of corn in the open part of the country. On the soft mouldy soil, when the corn was just springing, I have watched numbers of them. They chirp just like other Larks in their uncertain, hovering flight, and occasionally start up on wing, singing as they rise, and continue soaring till almost out of sight. It varies its flight sometimes to undulations, almost after the manner of *Pipits*.

Male. Length 6 in., wing $3\frac{8}{10}$, tail $2\frac{4}{10}$.

Female. Length 6 in., wing $3\frac{3}{10}$, tail $2\frac{4}{10}$.

Bill pale yellowish horn-colour, blackened on culmen, gonys, and tip. Legs clay colour, with blackish claws.

12. ALAUDA LEAUTUNGENSIS, n. sp.

This is a short-bodied, robust Lark, with long crest and absurdly long bill. It had a heavy flight and never attained any height in soaring. Its song abounded in loud, though somewhat sweet, notes. After rising some twenty or thirty feet, while engaged in song, it would suddenly drop downwards, with closed wings, to within a few feet of the earth, and then flutter along with a lark-chirp to some convenient spot to drop upon. The song reminded me of the rambling chant of *A. mongolica*, for which species I at first mistook it.

Male. Length 7 in., wing $4\frac{2}{10}$, expanse $11\frac{5}{10}$. Tail $2\frac{8}{10}$, culmen of bill $6\frac{\frac{1}{2}}{10}$, to gape $\frac{9}{10}$, from forehead to end of crest $1\frac{1}{2}$. Tarsus $\frac{9}{10}$, mid-toe, claw $\frac{6}{10}$; hind-toe $\frac{4}{10}$, its claw $\frac{3\frac{1}{2}}{10}$.

Bill pale yellowish horn-colour. Inside of mouth yellow. Iris dark hazel. Ear oval, placed nearly on the same parallel with the eye. Legs and claws pale clay-colour.

Female. Length $6\frac{7}{10}$ in., wing $3\frac{9}{10}$. Irides light brown. Bill and legs very pale flesh-brown, the former with a darker culmen. Claws short and pale flesh-colour.

The long, somewhat curved bill of this species, its crested head and short hind claws draw it very near to the *Certhilaudæ*.

Streak over and round the eye pale ochreous. Crest consisting of blackish-brown feathers margined with yellowish brown. Upper parts lark-like, tinged strongly on the rump and across the wings with rust-brown. Axillæ, flanks, and greater part of the basal half of each quill strongly washed with rust-colour. Under parts a dingy ochreous white, browner on the pectoral band, where frequent blackish-brown spots occur, which extend somewhat obscurely up to the lower mandible and towards the eye.

The *young* have a strong wash of yellow over the predominating brown. They are freckled on the wing and tail-coverts with yellowish white, and the back and rump in parts are obscurely striated with a darker hue. The brown spots that mark the centre of feathers in the older individuals are here very indistinct, and the pectoral spots do not show themselves. The long crest is very apparent.

Bill pale horn-colour, brown along the culmen; angle and inside of mouth yellow. Irides brown. Legs and claws very light flesh-ochre.

This species is very distinct from the *Alauda japonica*, which occurs in abundance in the plains of the Peiho; and I have named it after the Province of Leautung into a peninsula of which the bay flows.

13. Sturnus cineraceus, Schlegel.

This bird occurred here in flocks feeding in the open country, and roosting at night in the trees that grouped themselves about the hamlets. From the number of young birds in the flocks I infer that they spent the summer here for the purposes of nidification, and thence on the approach of winter betake themselves further south, and speed down the coast as far as Canton.

Yearling. Bill liver-brown with a wash of blackish. Inside of mouth yellowish. Legs clay-colour. All the dark parts of the adult plumage are in the young yellowish or light liver-brown; some of the feathers, especially on the head, being margined paler. The top of the head, freckles on the cheek, quills, and tail-feathers of a darker brown. The throat is whitish. At the commencement of winter this plumage becomes darker, and then attains to what is called "la livrée de passage" in the 'Fauna Japonica,' from which to the full summer garb is but a step.

14. Corvus (Monedula) dauricus, Pallas.

At the bottom of Talien Bay there is a creek with a flat rock, some eighty feet high, standing at its mouth. The side of this rock that faces the main, and the main itself, are very precipitous, jagged all over with broken fragments of rock, and rent in various parts into chasms and crevices. In such a spot nature has offered to the Jackdaw a secure retreat, and the bird seems fully conscious of the blessing. Thousands of them all day long flock in and out with food for their young, who keep up a constant clamour within their secure strongholds. We landed on the island, and having clambered up on the other side, stood over the Jackdaw site. The birds soon observed the intruders, and contrived a good many *dodges* to go in and out of their nests unnoticed; some would quietly steal round the rocks and suddenly slip into their holes, others would dash by in parties and in an instant disappear in all directions on the rock face. Again, in flying out from their nests, instead of starting off direct, they flew first towards one side then towards the other, describing a series of angles until they turned the corner. But finding our intrusion at last irksome, they assembled in large flocks aloft, and kept hovering over our heads, uttering the peculiar cracked note of the Jackdaw. I managed, with the assistance of the boat's crew, to get down the rock some little way, and to examine one of the nests placed in a creviced ledge. The nest was a rude open construction of straw, grasses, and other materials hastily collected together, and lined profusely with feathers. It contained two newly-fledged young. The insides and angles of their mouths were bright yellow, their eyes greyish, and the light portion of their plumage was of a sullied grey. Their cry for food consisted of a strange *yerking* note. When the young birds are able to fly, their parents conduct them to the trees in the neighbourhood, where they roost, and whence they can easily explore the plains. The note of alarm employed by these birds consisted of nasal "caws," very different from the ordinary *falsetto* cries. The old birds were in bad plumage, so I did not procure any specimens; but I shot two full-grown young, of which I subjoin a description.

Yearling. Bill black, with a light-coloured tip. Legs black, with light soles. Eyes blackish brown. Inside of mouth pale yellowish. The general colour of the plumage is a dull black, enlivened somewhat on the head, quills, and tail with a gloss of dark green, more vivid on the two latter; the wing-coverts and tertiary quills have, on the other hand, a lively gloss of purple.

A broad band encircling the lower neck, the lower part of the breast, and the belly, are of a smoke grey. The birds undergo an autumnal moult, in which black tints become much brightened and the grey approaches to the white of the adult. The authors of the 'Fauna Japonica' have somewhat jumbled the description of this bird with that of the following species.

15. CORVUS (MONEDULA) NEGLECTUS, Schlegel.

In most flocks of the pied species a few of these were to be seen, but they were by no means common.

16. CUCULUS STRIATUS, Drapiez.

This Cuckoo is found all down the coast of China throughout summer, but in winter it leaves us. Mr. Blyth has identified the species. Our specimens are invariably larger, and have weaker bills than skins from India, but in other respects I can see no difference. The note of this bird has a wonderful similarity to that of *Cuculus canorus*.

17. COLUMBA LEUCOZONURA, n. sp.

This Rock-Pigeon, at once distinguishable from *C. livia* by its white tail-band, its purple breast, and the reversion of the resplendent tints that adorn the neck, is found in immense numbers in Talien Bay, where the precipitous rocks abounding in dark limestone caverns afford it a safe retreat and present it with cradles for the rearing of its young. The caverns these birds generally choose were dark and unwholesome-looking, with the damp trickling from the roof. In these places out of arm's reach the pigeons chose rocky ledges to place their stick-built nests on; rude constructions they generally were. You never watched long before seeing some bird either going or returning with food. They mostly went on these excursions several together, and dashing by with rapid flight, made for the fields of newly-planted grain, into which they would drop and commence to search for food. On our first landing we found no difficulty in approaching to within a few yards; but they very soon learnt to dread the gun. The ships of war that visited this bay during early spring, report these birds as wandering about the country, associated in immense flocks. One officer, I was informed, brought down thirteen at one shot.

Adult male. Bill blackish brown, with the swollen membrane pale bluish white. Iris yellow round the pupil, with a broader outer circle of blood-red. The naked skin round the eye pale flesh-colour. Legs bright pink, with blackish claws. General plumage light greyish blue. Middle of the neck all round splendent with purple pink, its lower part with emerald green. Back, upper part of the sides, and lower wing-coverts pure white. Primaries brown on their outer webs and ends, the brown on some of the feathers being yellowish and light. Secondaries with their ends a rich dark brown. Two black bars half across the wing, one extending half across the secondary coverts, and the other over the inner secondaries. Head, rump, and tail bluish smoke-grey, the latter *barred with a broad white band* 1¼ inch in extent, and then by a terminal black bar 1 inch in depth. The white runs up the outer web of the outermost feather to its base. Breast reddish purple. Lower parts light bluish grey.

18. COTURNIX DACTYLISONANS, Meyer.

Not common.

19. CHARADRIUS PHILIPPINUS.

This was the common species here to be met with all along the sandy beaches and gullies. You found them also in the ploughed fields and grassy meadows; in fact, wherever the ground is flat. The bird runs with amazing velocity, carrying its head rather low and its tail uplifted. When on wing it flutters along, uttering its merry note "tew-tew." One morning I was passing along a sandy water-course looking out for terns, when a pair of small Plovers rose and flew round and round me in great agitation, whistling and quivering their wings with every sign of distress. The foolish birds! if they had not alarmed themselves, I should have passed without noticing what met my eyes when I examined the ground closely. Two wee downy things were creeping about amongst gravel, so much the colour of the ground that they were extremely hard to detect. They uttered a sharp cry not unlike that of a young chick, and offered no resistance to my hand when I attempted to pick them up. The old birds grew bold and noisy, perching close to me, and then running off to attract my attention, and flying round and round again. I brought the two young ones home. They support themselves on the bases of their tarsi when walking. The down is short and fluffy. Forehead, neck, under parts and wing white. Upper parts and shoulder freckled with chestnut and white. A line round the crown and fringing the rest of the upper parts black. Down of tail long and black. Bill and eyes black. Legs pale flesh-colour, with a leaden tinge; claws black.

The adult male has the bill and eye blackish hazel; the latter with a broad bright yellow skin round it. Legs orange-ochre, with blackish claws.

20. IBIS —— ?

I only once met with a party of these birds. They were feeding in a small stream left by the retiring tide. As we approached they rose and flew slowly to another spot. I could plainly see that they had dark heads with curlew-like bills, and that the rest of their plumage was *entirely* white. There were six of them together, and they all appeared similar*.

21. HÆMATOPUS OSTRALEGUS, Linn.

I occasionally saw this bird flying across the water close to its surface with quick flaps of the wing. One perched in the mud and commenced raking about in it. This specimen I secured. It is in every respect similar to the European bird, and we have met with it year after year along the coast. From this bird being seen so frequently at Talien Bay during June, I have reason to believe it breeds there.

Adult male. Bill and eye-rim bright orange-lead. Iris crimson. Legs fine pink, with pale brownish claws.

22. HERODIAS EGRETTOIDES, Schleg.

A large white Heron, I fancy the Japanese bird, seen in company with the party of Ibis.

23. PHALACROCORAX CARBO, Linn.

A black Cormorant very like our southern species, frequently seen. I was unable to secure one.

24. LARUS MELANURUS, Schleg.

All the Gulls seemed to be this species. They were very common, though I could not discover their resting site.

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* Possibly *Ibis nippon* of the 'Fauna Japonica,' pl. 71.—ED.

Adult male. Beak greenish yellow for over $\frac{2}{3}$ of basal portion, apical portion black with vermilion tinge, bright on the culmen, near the tip, and on the lower mandible. Inside of mouth orange-red. Iris pale straw-yellow. Eye-rim vermilion. Legs bright yellow with a greenish tinge; claws black.

XXV.—*Letter from* Mr. Swinhoe *on the Ornithology of Amoy and Foochow.*

To the Editor of 'The Ibis.'

Sir,—A few more words on the birds of this province (Fuh-keen) before I take my departure to the comparatively new field at Formosa. I have submitted a specimen of the *Larvivora cyanea*? (marked "7" in 'Ibis,' 1860, p. 359) to Mr. Blyth, and that gentleman pronounces it perfectly distinct from Hodgson's species. I have therefore named it *L. gracilis,* and beg to offer a diagnosis of its characters.

Larvivora gracilis, n. sp.

Bill, upper mandible brown, lower ochreous, with yellow rictus. Legs and claws yellowish flesh-colour. Iris hazel. Top of the head dark olive-green, quickly blending into the cyanean blue of the upper parts. Wings and tail dark brown, tinged with bluish grey, and indistinctly edged with yellowish brown. Throat, breast, cheek, and region of the eye yellow ochre, the feathers being palely edged with olive brown. Belly and vent white. Axillæ and flanks dark bluish-grey.

Length $4\frac{6}{10}$ in., wing 3, tail $1\frac{8}{10}$. Bill $\frac{1}{2}$ in. Tarse 1 in.; hind-toe $\frac{6\frac{1}{2}}{10}$, its claw $\frac{2}{10}$.

I twice procured this species in the autumn of 1859. It was perhaps a passing migrant, accidentally blown on the island. It is very elegant in its contour, and appeared very tame, allowing me to approach within a few yards of it. It kept a good deal on the ground, hopping and running with a quick ambling motion among the dried leaves, expanding and closing its tail with a slight vertical depression, and seemed to be searching for small chrysalides, and for the dipterous insects that had taken refuge among the fallen leaves to escape the rude blast that caused the branches overhead to sway to and fro; for such insects were found in its stomach.

Our *Cypselus affinis* is more strictly Blyth's Malayan *C. subfurcatus*; and the *Querquedula multicolor* is the *Anas falcaria*, Pallas.

No. 8, *Micronisus badius*, Gmelin, I have already informed you, is, according to Blyth, *Accipiter virgatus*, Temminck.

No. 87, p. 358, *Munia minima*, Lath., I have received from Mr. Blyth, ticketed *Munia acuticauda*, Hodgson, Burmah; and another species was at the same time sent from Calcutta, bearing a similar form, but with blacker breast and cheeks, named *Munia striata*, Linn. Specimens in my present collection from Formosa are identical with that procured at Burmah, though a specimen from Shanghai appears to be different.

Tchitrea cæruleocephala, Quoy et Gaim.? (No. 66 of my first paper) proves to be *Myiagra azurea*, Bodd.; and to the Flycatcher list I must add another species, *Stoparola melanops*, Vigors. Both these birds Mr. Blyth tells me are common in Bengal. Of the former two females were procured here in the autumn of 1859, and one female of the latter. We cannot therefore look upon them but as rare stragglers to this island.

No. 12. *Circus*, sp.?, is closely affine to, if not identical with, *Circus uliginosus* of America. There is a specimen of this species in a cabinet at Hongkong procured from Manilla through Mr. Cuming.

Of the two *Caprimulgidæ*, one affine to *C. jotaka* of Japan is described by Mr. Blyth as *C. swinhoei*; the other that gentleman tells me is a very near ally of *C. monticola* of Asia.

The rest of the doubtful species of Amoy I have sent you with one or other of my late papers.

There is one other bird that I jotted down without careful comparison, and that is the *Cormorant* that winters in this harbour. I set it down in my list as *Phalacrocorax carbo*. Now I discover, on close comparison of my specimens with the bird in the 'Fauna Japonica,' that our species is undoubtedly referable to *P. filamentosus*, Schlegel, of Japan. But I see, in the 'Fauna Japonica,' *P. carbo* is also noted at Japan and at Kamtschatka, and Mr. Blyth tells me it is found in India. I have therefore every reason to suppose that it also favours this coast with its visits during winter. Can the Editor inform us whether *P. filamentosus*, which Schlegel says "n'a été observé jusqu'à présent qu'au Japon," is the same bird as *P. sinensis*, Shaw, Nat. Misc. pl. 529 ?* If so, which name has the priority ? A young bird of this species was shot a few days ago in the harbour here, and so I have just had an excellent opportunity of comparing the bird in a fresh state with the different accounts.

P. FILAMENTOSUS, Schlegel, juv.

Bill yellowish horn-colour, with a blackish-brown culmen ; at the base of both mandibles yellow, and bright orange-yellow on the naked skin about the face. Inside of mouth yellowish flesh-colour. Iris *yellow*. Legs blackish brown, with a purplish tinge, and lighter claws.

Length 31 in., wing 12, tail $5\frac{1}{2}$. Bill, upper mandible $2\frac{1}{2}$ in., lower $3\frac{4}{10}$. Tarsus $2\frac{3}{10}$ in. ; 1st toe $3\frac{7}{10}$, its claw $\frac{4\frac{1}{2}}{10}$; 2nd toe $2\frac{9}{10}$, its claw $\frac{1}{2}$; 3rd toe $2\frac{2}{10}$, its claw $\frac{1}{2}$; 4th toe $1\frac{1}{2}$, its claw $\frac{1}{2}$.

From the above it will be seen how much nearer the measurements of my bird agree with those of *P. filamentosus* in the 'Fauna Japonica,' than with those of *P. carbo* in Macgillivray. The most striking resemblance, however, is in the disposition of the naked skin, which Schlegel ably describes thus, "Peau nue du tour des yeux et de la région des freins descendant vers l'angle de la bouche, et se rénuissant à la poche gutturale, sur la ligne médiane de laquelle s'avancent les plumes de la gorge en couvrant un espace en forme d'un angle très-aigu et long d'environ dix lignes."

Foochow is the chief city of this province, situated in a well-watered picturesque valley more than half surrounded by woody hills, and some 30 miles from the sea. I visited the spot in June 1857, and then procured some species which I have never observed in Amoy ; and through the kind exertions of Mr. Holt of our Service, since stationed at that port, I have been enabled to add a few others to my collection. As I am of opinion that a list of these birds would prove of interest to the readers of 'The Ibis,' I will make no excuse for submitting it here :—

ACCIPITER VIRGATUS, Temm.

One shot at Amoy. Several received from Mr. Holt.

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* Shaw's bird appears to be merely the Chinese variety of *P. carbo*, and not *P. capillatus* (i. e. *filamentosus*).—ED.

ATHENE CUCULOIDES, Jerdon.

Canton and Foochow. Very common during summer at the latter place.

SCOPS LEMPIJI, Horsfield.

Canton and Foochow. Mr. Blyth observes that specimens of both this and the last from China are rather larger than those of India.

DICRURUS CINERACEUS, Horsfield.

Common in the vale of Foochow, but not found on the tableland or the hills, where *D. macrocercus,* Vieill., takes its place.

CORYDALLA SINENSIS, Bp.?

Foochow hills. This is a smaller bird than *C. richardi,* with comparatively larger bill and legs, and I think is very likely to prove to be Bonaparte's species. The distribution of colours in the two specimens I have is similar to that in the cognate Lark, which latter, by the way, varies considerably in the tone of the ochreous tinge that washes the plumage.

ENICURUS SPECIOSUS, Horsfield.

Pehling hills, Foochow. I never met but one, and that answers so completely to Horsfield's description in the 'Researches in Java,' that I have little doubt in assigning to my bird his specific name.

POMATORHINUS STRIDULUS, n. sp.

This small Wren-like species, which Mr. Blyth marks as new, is common on the Pehling hills, Foochow, where I have procured however but one individual. It possesses a long rattling note, which it utters when disturbed in its haunts, and perching close to the intruder, stoops its body to its feet, and throws up its tail at right angles, assuming at such times much the appearance of a Wren.

Upper mandible of bill brown, lower yellowish. Legs brown, with pale claws. Iris hazel. Upper parts olive-brown with a rufous tinge; the brown on the wings and tail being darker on the inner webs of the feathers. A white streak runs over the eye, and a black one under it, from the nostrils to the ear, which it covers. Beyond these two streaks a chestnut nuchal patch occurs, which extends on either side, and meets semicircularly on the hind neck. Throat white. Breast reddish chestnut-brown, with most of the feathers broadly edged with white on their sides. Axillæ rather paler than the breast. Belly, flanks, and under tail-coverts of the same tint as the back.

Length 6$\frac{8}{10}$ in., wing 2$\frac{7}{10}$, tail 2$\frac{8}{10}$. Bill along culmen $\frac{7}{10}$ in., from rictus $\frac{9}{10}$. Tarse 1 in.; hind-toe $\frac{8}{10}$, its claw $\frac{2\frac{1}{2}}{10}$; hind-toe $\frac{1}{2}$, its claw $\frac{3}{10}$.

Hypsipetes holtii, n. sp.

This bird, which I procured from the Pehling hills near Foochow, is, as Mr. Blyth remarks, "barely separable from *H. maclellandii* of S. Himalaya, Assam, &c., but is of a duskier hue on the back, scapularies and shoulders, with less and weaker rufous on the breast." When closely compared, however, the two species present differences, in my opinion, quite justifying a separation. I have a male of both species before me. The bill of *H. maclellandii* is longer and more arched, with yellowish under-mandible. Ours has a somewhat straight blackish-brown bill. Legs and claws brown. Crown of head with pointed feathers of a deeper brown with paler streaks. Back and scapulars olive-brown with paler shafts. Gular feathers pointed, of a smoke-grey, with broad white medial streaks. Cheeks and fore neck pale rufous brown. Under parts with a rufous-brown wash. Vent yellow. Wings and tail as in *H. maclellandii*, but less xanthous. Our species is moreover larger, and has a longer tail.

Spizixos semitorques, n. sp.

A common species on the Pehling plateau, where it frequents the bushes, and appears to be substituted for the *Pycnonotus occipitalis*, Temm. (nec *P. sinensis* sive *P. jocosus*), of the plains below. Mr. Blyth considers it a typical *Spizixos*, and alludes to a figure resembling it of a bird brought from Assam. He says it differs from his *Sp. canifrons* "by its black forehead, want of crest, greater extent of black on throat, &c.; but, except the head and neck, that there is hardly any difference."

Length 7$\frac{3}{4}$ in., wing 3$\frac{7}{10}$, tail 3$\frac{7}{10}$. Bill $\frac{1}{2}$ in. Tarse $\frac{7}{10}$ in.

Bill pale yellow. Legs and claws pale liver-brown. Iris brown. Head black, yielding to smoke-grey on the occiput and hind neck. A white patch occurs on each side of the forehead and at the base of the lower mandible. The cheeks are streaked with the same, which accumulates to a patch on each side of the nape, and advancing on the fore neck with a mixture of smoke-grey, forms a half-collar. Upper parts, breast and flanks olive-green. Inner webs and shafts of rectrices deep rich brown, rest of wing yellow olive-green. Tail also olive-green, with brown shafts and edges to inner webs, and a black band at its end. Edge of wing bright greenish yellow, as are also the remaining under parts.

GARRULUS ORNATUS, G. R. Gray.
Common at Foochow and Ningpo.

UROCISSA SINENSIS, Gould.
Canton and Foochow.

CHRYSOMITRIS SPINUS, Linn.
Foochow.

POLOPHILUS SINENSIS, Steph.
Canton and Foochow.

PICUS CABANISI.
Identified by Mr. Blyth. Also procured at Canton.

BRACHYPTERNUS BADIUS, Raffles.
Rather larger than Malacca specimens. I procured this myself. It attracted my attention by its laughing note as it ran up the trunk of a tree. I have never seen but one from Foochow.

GECINUS ——?
Smaller than *G. viridis* of Europe, but a good deal resembling it, except that the capital decoration of the male is confined to the forehead. I have unfortunately sent home the only male and two young ones that I procured from Foochow; I can therefore give no further note of the bird.

GALLICREX CRISTATUS, Lath.
Also procured at Canton.

RHYNCHOPS SINENSIS, Linn.
At Canton also.

Just as I am closing this letter my hunters arrive with a fine specimen of *Colymbus,* but I find I cannot reconcile it with my description of *C. glacialis.* Here is a note of the bird they have shot in Amoy harbour :—

Length 25 in., wing $11\frac{4}{10}$. Bill along ridge $1\frac{2}{10}$, along edge of lower mandible $3\frac{2}{10}$. Tarse 3 in.; 1st toe $2\frac{7}{10}$ in., 2nd $2\frac{9}{10}$, 3rd $2\frac{1}{2}$, 4th $\frac{1}{2}$.

Tarsus on the inward surface, surface of the toes, and median line of webs pale bluish grey variegated with purplish black, which forms the pervading colour of the outward side of the tarse and the under surface of the feet. Bill flesh-colour with blackish-brown culmen. The upper head and neck are grey; and the back and scapulars spotted with white on a greenish-black ground. All the under parts are *pure* white. Now Schlegel, I find, puts down the *Colymbus* that winters at Japan as the *C. arcticus* ; but this assuredly does not answer that species. Is our bird the *C. adamsii**, not long since described by G. R. Gray? or is it a species with which the Editor of 'The Ibis' is not acquainted?

Yours, &c., ROBERT SWINHOE.

British Consulate, Amoy, February 20th, 1861.

XXVI.—*Note on the Calcutta* 'Adjutant' (*Leptoptilus argala*).

By EDWARD BLYTH, Curator of the Asiatic Society's Museum, Calcutta.

IN 'Chambers's Journal' for January of the current year, p. 40, I observe an article entitled "The Calcutta Adjutant, or *Hurghila* of the natives of Bengal," of which term its technical specific appellation is of course a corruption. It contains a deal of nonsense, which I forthwith proceed to criticise and correct.

We are told, in the fourth paragraph, that these gaunt birds "have a long, straight, broad bill, *much depressed, the upper mandible flattened, and terminated by a very strong hook* [!]; the lower formed by two bony branches, *which are flexible,* and united at the tip; *from these branches are suspended a naked skin, in*

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* *C. adamsii* is the Pacific form of *C. glacialis,* and generally resembles the latter, except in its larger yellowish-white bill. See Mr. Gray's description (P. Z. S. 1859, p. 167). It is probable that Mr. Swinhoe's bird may be *C. adamsii* in immature plumage.—ED.

form of a pouch." Now the whole of what I have put into italics is utterly untrue, as I scarcely need inform the readers of 'The Ibis.' Next, the row between the 'Adjutant' and the Crows, mentioned in the second column of p. 40, was (I have not the slightest doubt, from personal observation of a similar affray) the result of "the raw-headed old Adjutant" having seized and gulped some unlucky juvenile member of the Crow community. Generally speaking, when an 'Adjutant' commits a misdemeanour of the kind, he carries his victim to the nearest tank, and soaks it thoroughly before engulfing it. But this, it would seem, did not happen in the instance witnessed by the author of the narrative in 'Chambers's Journal.' We are told that "the impertinent Crows had by far the best of this recluse. They attacked him principally about the head, which has at all times a bare and sore appearance. At last, driven to desperation, the Adjutant, by a manœuvre, possibly more by accident than good management, succeeded in seizing one of his foes with his large and powerful bill. The hour of that bird's dissolution had arrived, and he was not to die as other Crows have died from time immemorial! There were two or three efforts made on the part of the Adjutant, and, in a moment more, the Crow, body and limbs, was *in the sienna-toned pouch* of the greater avenger. He who writes it saw it done." Now there happens to be no connexion whatever between the pouch and the gullet! The former is connected with the respiratory system of the bird, and analogous (in my opinion) to the air-bag attached to one being only—a Python or Boa, and, as in that case, no doubt, supplies oxygen to the lungs during protracted acts of deglutition. In the smaller Indian Adjutant (*L. javanicus*) there is no pouch; but the latter is not (in its wild state at least) a feeder on garbage of all kinds, but subsists mainly on small aquatic animals, never venturing about human habitations like its big congener. About what is said of the size and plumage of the Calcutta Adjutant, the fact is simply this, that the males are larger than the females, and the grey birds with broad albescent wing-bands are the adults of either sex in nearly moulted plumage.

"The Adjutant's cry very much resembles water flowing from a narrow-necked bottle; and it invariably utters it when about to swallow a piece of offal." Decidedly not! The bird happens to have no cry at all, and (like most other Storks) wants the sterno-tracheal tendinous muscles, and is therefore voiceless. The only noise it can produce is by clattering its mandibles together, as may be likewise observed in the case of *Ciconia alba.*

Calcutta, March 25th, 1861.

XXVII.—*Ornithological Notes from Mauritius.* By Edward Newton, M.A., C.M.Z.S.—No. II. *A Ten Days' Sojourn at Savanne.*

I left Port Louis on the 26th September, 1860, for St. Martin, an abandoned sugar-estate situated on the coast of Savanne, the southernmost district of Mauritius, where I was in hopes of finding a very different lot of birds from those which frequent the neighbourhood of the metropolis. Being the first holiday of any length I had taken since my arrival in the island, I determined to devote it to getting a better knowledge of its ornithology; and, as may be supposed, I greatly enjoyed not merely the complete relaxation from all work thus afforded me, but also the being able to turn my attention more fully to my favourite pursuit. The only drawback was the short time that I could be away. Two of my friends had preceded me, and I found their tent pitched within twenty yards of high-water mark, under the shade of a line of Filao-trees—Madagascar Fir (*Casuarina equisetifolia*). The ground all along the sea-shore was covered with short grass—almost down-like, and unencumbered by the large blocks of basalt which are found nearly everywhere else over the island. Altogether it was as pleasant a spot for a camp as ever was seen. Unfortunately there was not, anywhere near, above three or four feet of water inside the reef (which lies about a mile and a half out); and the bottom was covered with long slug-like monsters which have very sharp feelers, and scratch uncommonly if you tread upon them; so there was not much bathing to be had, beyond sitting for half an hour or so in a place free from these brutes. In many parts of the tropics it would be impossible to encamp by the sea-shore on account of the sand-flies and mosquitoes, but here there are none of the former and very few of the latter. My notes on the birds I met with are as follows :—

TINNUNCULUS PUNCTATUS. (Hartl. Orn. Beitr. p. 18.) *Mangeur-des-poules.*

A few, but not so many as I have found elsewhere. From the appearance of a male that was shot, I should think they must breed at this time of the year.

COLLOCALIA FRANCICA. (Hartl. *l. c.* p. 27.)

Not so numerous as in the neighbourhood of Port Louis.

PHEDINA BORBONICA. (Hartl. *l. c.* p. 27.)

This very local species is tolerably common. They seem fond of feeding over the sand at low water and sitting on it, after the manner of Sand Martins in England, uttering at the same time a most peculiar whistle for a Martin. When flying they have a note which very much resembles that of a Bee-eater, as far as my recollection goes of that bird's cry when passing through Egypt in 1859. These birds are also given to perching on trees; and I noticed three that were in the habit of taking up their position on the same bough every day at about the same hour, probably awaiting the falling of the tide. They are, I think, early breeders. In a small cavern on the western face of the east side of the Baie du Cap, I saw several, and, from their manner, I am certain that they either had nests or were about to build. I observed one which had its back of a dark ash-brown; I had no gun with me at the time, and the individual never showed itself again.

TCHITREA BORBONICA. (Hartl. *l. c.* p. 46.) *Coq-du-bois, Coq-marron.*

A few seen, but not as many as the nature of the country would have led me to expect.

HYPSIPETES OLIVACEA. (Hartl. *l. c.* p. 44.) *Merle.*

A few in the forests; but I only saw them one day. They seem to be entirely arboreal and frugivorous. The gizzards of two that I examined contained berries. They are very stupid birds, and by simply squeaking, in the manner that one would to attract a Jay or a Magpie, one causes three or four to make their appearance, settling on a bough, close above the intruder, holding their heads on one side, and giving their tails a curious lateral jerk, uttering at the same time an indescribable sort of "*quok,*" much like the croak of a Song Thrush when it has young. Besides this, they have, I know, a low whistle; and I heard some bird singing, nearly in the same key, a low inward song, as Redwings do in the spring before they leave England, which I think must have proceeded from a *Merle.* If it did not, it must have been the performance of some bird I do not yet know, as I can hardly expect *Oxynotus ferrugineus* to possess any great musical powers.

ZOSTEROPS CHLORONOTUS. (Hartl. *l. c.* p. 41.)

I saw a pair on the hills at St. Martin, and two more pairs very near Souillac. They therefore do not, as I once supposed. remain only on the very high land. The only note I have heard them utter is a short impatient "*tic-tic.*" At Bourbon (Réunion) there is a bird called *Tectec,* probably the same as this.

FOUDIA MADAGASCARIENSIS. (Hartl. *l. c.* p. 55.) *Cardinal.*

As common at Savanne as in other parts of the island. The males appeared either to have completed their red plumage, or to be in a fair way of doing so.

FOUDIA ERYTHROCEPHALA. (Hartl. *l. c.* p. 55.)

Not so abundant at Savanne as the preceding species. The cocks had assumed the nuptial dress. Their note resembles that of *Zosterops chloronotus,* and both birds are, I believe, here called by the same name, *Zozo* (i. e. *Oiseau*) *Banane,* perhaps for this reason.

ESTRELDA ASTRILD. (Hartl. *l. c.* p. 56.) *Bengali.*

Perhaps not so common as near Port Louis.

CRITHAGRA CHRYSOPYGA. (Hartl. *l.c.* p.57.) *Serin-du-pays.*

Very common along the shore, and wherever Filao-trees are to be found. The song is something between the Linnet's and a Siskin's.

CRITHAGRA CANICOLLIS. (Hartl. *l. c.* p. 57.) *Serin-du-cap.*

At Jacoté this bird is extremely abundant: at St. Martin it was comparatively scarce, and I only saw one or two flying over.

At the former place, which belongs to Mr. Telfair (a relative of him of Dodo celebrity), the house is surrounded by a grove of Filao-trees, and a perpetual concert was kept up by these birds. The song is not unlike that of a tame Canary, but not so loud, and the notes are sweeter. They were just beginning to build, as I saw one flying with a feather in its mouth, but I was unable to watch where it went. Mr. Telfair took me to see, as he said, 10,000,000 birds of all sorts in one field! Though this was a slight exaggeration, there were certainly a good few—perhaps as many as I ever before saw at once. The piece of land was in "plant-canes," and very foul with a species of Groundsel, then in seed, which was probably the cause of the multitude. The *Serin-du-cap* was perhaps the most numerous; but there were thousands of *Serins-du-pays,* Cardinals, *Bengalis,* the Small Green Parrakeets, and *Tourterelles,* which were flying round on all sides as thickly as Sparrows, Finches, and Buntings in a farm-yard at home in winter-time. I wished I had had with me some of the people who say there are no birds in Mauritius!

ACRIDOTHERES TRISTIS. (Hartl. *l. c.* pp. 54 & 87.) *Martin.*

As plentiful there as elsewhere. Thousands roost in a grove of shrubby trees by the Mer St. Martin. They arrive soon after sunset from all parts, in parties of from one to three or four pairs, and commencing their chattering, screaming, and whistling, continue it till after dark. Then, too, they are not always quiet, as in the middle of the night one fellow would give the alarm and the row would become general; perhaps they were frightened by a cat, a monkey, or some such beast. In the morning, at first break of day, the noise would begin again in real earnest, and continue till a few minutes before sunrise, when they would depart in small parties as they arrived. Altogether they make as much fuss about going to bed and getting up as any birds I ever heard.

AGAPORNIS CANA. (Hartl. *l. c.* p. 59.) *Perruche.*

I saw more in the cane-piece just mentioned than anywhere else. Round our camp there were several. They were usually flying about the Filaos, from one tree to another, chirping and whistling, and settling four or five together in a heap on the same bough, where they would begin to squabble and fight until one lost his hold, when they would all start off again to repeat the operation on another bough. They fly very fast and straight. I was unable to make out anything of their breeding time or locality, but from the appearance of two I dissected, the former could not be very far distant.

GEOPELIA STRIATA. (Hartl. *l. c.* p. 67.) *Tourterelle.*

Of this little *Tourterelle* there are plenty in Savanne. On the 5th of October I found a nest containing two eggs, on the top of a large tuft of grass which was laid by the wind. The nest was perhaps larger and more neatly put together than Doves' nests usually are.

In Grande Savanne, both going and returning, I saw several Doves of what I supposed are called *Tourterelles de Batavie.* They are larger than the last species; but I could not get one.

FRANCOLINUS MADAGASCARIENSIS. (Hartl. *l.c.* p. 69.) *Pintadé.*

These birds are tolerably common about St. Martin. Altogether I think we saw about nineteen brace, of which we killed fourteen. They lie very close, and in good covert will almost allow themselves to be trodden on before rising, but on bare ground they run for a considerable distance. They were generally in pairs, though on two occasions we put up three together; but from their habits it is not always easy to find the second bird, when one has been flushed. They appear to keep in the bushes and canes during the heat of the day, and to come out night and morning to feed in the barren places and fallows. The call of the male is a regular crow—"*Kercuck, kercuck, kerkārr.*" They seldom fly more than a couple of hundred yards, and with about the speed of a badly-grown Pheasant in September, so that, if the nature of the ground will allow, they can be nearly always marked down. With a good brace of pointers, I think twenty brace might easily be killed in a day on that ground: we had only one old dog, and did not take much trouble about it; but one day, in four hours' shooting (two in the morning and two in the afternoon), we killed six brace and a half.

Francolinus ponticerianus. (Hartl. *l. c.* p. 69.) *Perdrix rouge.*

Not nearly so common at St. Martin as the preceding. They seem to prefer the neighbourhood of cane-fields rather than grass and brush-wood. I only saw a pair, and had but one shot, killing the bird. On the wing they are a much stronger bird than the *Pintadé.* The call of the male sounds like "*Térra-cotta, térra-cotta.*" They are said to keep in coveys of five or six, to run very much before dogs, and to perch.

Synœcus sinensis. (Hartl. *l. c.* p. 71.)

Not very numerous; they stick as close as possible under a dog's nose, and will allow you to pull away the grass and discover perhaps four or five sitting all together before they rise. They seldom fly more than eighty or a hundred yards, and though marked down, it is very difficult to find them again.

Gallinula pyrrhorrhoa, A. Newton*. (*G. chloropus,* Hartl. *l. c.* p. 81.) *Poule d'eau.*

I heard several birds in the rushes at Jacoté, which I was told were *Poules d'eau*; but the note was different from that of the European Water-hen; in fact, I am quite sure that the example I sent home in the last lot was of a species distinct from *G. chloropus.*

Butorides atricapilla. (Hartl. *l. c.* p. 75.) *Gasse.*

All along this coast this small Heron is very common. At St. Martin, by the side of the lake, there is a scrubby wood, consisting chiefly of high bushes, growing very like tall hawthorns, with here and there a tree, but not exceeding thirty feet in altitude. Here is a great resort for this species, and five or six pairs perhaps seem to look upon it as their home. I found two nests—one with two young ones nearly ready to fly, the other with two eggs nearly ready to hatch. In habits, general appearance, and note, particularly the latter, these birds greatly resemble the West Indian *Butorides brunnescens* (Gundlach), excepting that I have not seen them feeding away from the water. The gizzards of two that I examined contained remains of mollusks.

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* This is the species mentioned in our January Number ('Ibis,' iii. p. 116), and since described by Mr. Alfred Newton at the Meeting of the Zoological Society, January 8, 1861 (P. Z. S. 1861, p. 18), under the above name.—Ed.

NUMENIUS PHÆOPUS. (Hartl. *l. c.* p. 77.) *Corbijeu.*

As the tide ebbs, flocks of from five to twenty Whimbrels come and feed on the mud. They are very wild—so much so, that I only succeeded in getting one specimen. At high water they appear to retire inland; and I put some off a piece of turned-out cane which had been eaten close by cattle. The bird I shot was in very fresh plumage, having apparently but very recently moulted—indeed its pen-feathers were not half-grown. I saw them at Flat Island in March, and in October I was told they had only just made their appearance at Savanne, and that they stayed but a short time. However, I found some at Cannoneer's Point, on the north-west of the island, the last week in January or first in February of this year (1861), and I heard of one having been killed on the 21st of April, and large flocks seen, so that at any rate they must remain here during the whole of our summer.

TOTANUS —— (?).

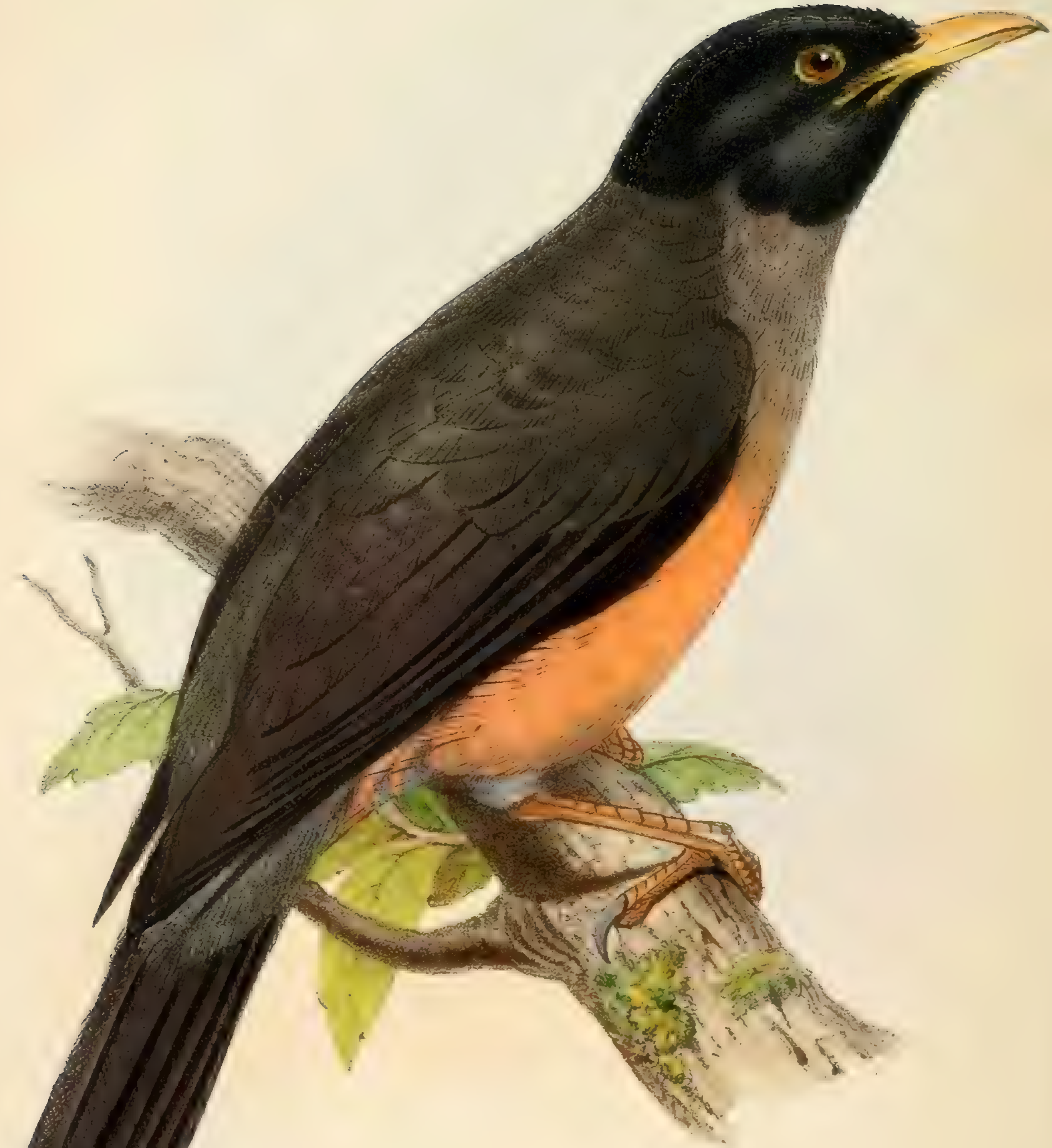
On the 27th of September, by the side of the Mer St. Martin, I saw a large Sandpiper, about the size of a Greenshank. It was very wild, and I could not get within a hundred yards of it. I saw it again two or three days after, and with no better success.

TRINGOIDES HYPOLEUCUS (?). (Hartl. *l. c.* p. 78.)

The same day that I first saw the last-mentioned species, I had a shot at one of two birds, to my mind exactly our Common Sandpiper. This was at St. Martin. On the 7th of October, I saw one of apparently the same species at Jacoté, but I had no gun. I have also seen them in the vicinity of Port Louis.

PHAËTON FLAVIROSTRIS. (Hartl. *l. c.* p. 86.) *Paille-en-queue.*

A few are to be seen about Savanne; but there are hardly rocks enough to afford breeding-places for many. I think a good number breed in the woods about Curepipe, on the tops of the parasitical ferns which grow on the trees: these great bunches of fern form one of the most characteristic features of a Mauri-



tian forest. First of all, I suspect, the White Ants make a nest, then the seeds of the fern are deposited in it and grow, and afterwards this Tropic-bird takes possession of it.

So much for the birds of Savanne. The absence there of two species which are elsewhere so common is curious—I mean *Zosterops borbonica* and *Munia punctularia*; the first I never saw near the sea, the second nowhere at all in the district. I have heard of a fine Pigeon, which is said to occur in this part of the island, but it seems to be gradually getting scarcer, owing to the destruction of the forests, and I was not lucky enough to meet with it. I suspect it will turn out to be *Alectrœnas nitidissima*.

XXVIII.—*Remarks on the Geographical Distribution of the Genus* Turdus. By PHILIP LUTLEY SCLATER.

(Plate VIII.)

THE Thrushes proper, of the genus *Turdus* as now restricted, although hardly to be called cosmopolitan in their range, since this particular form is not known to occur in New Guinea, Australia, and the greater portion of the Pacific islands, are very widely distributed over the earth's surface. In company with a figure of *Turdus fulviventris* (a fine American species of this group, which has lately been described in the 'Proceedings[*] of the Zoological Society,' and will be readily recognized by its distinct style of coloration), it may not be out of place to offer some few remarks on the present state of our knowledge of the geographical distribution of the members of this genus.

Beginning with the PALÆARCTIC[†] region, which embraces the whole northern part of the Old World, the species of Thrush inhabiting its western portion are six in number—the well-known *Turdi torquatus, merula, viscivorus, pilaris, musicus,* and *iliacus.* Though *Turdus migratorius* and one or more of the group of little Thrushes allied to *T. wilsoni* of the United States have occurred accidentally in Europe, they cannot be considered to have any real claims to a place in its Avifauna.

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[*] See P.Z.S. 1857, p. 273, et 1859, p. 331.

[†] Cf. Journ. Proc. Linn. Soc., Zool., ii. p. 130 *et seq.*

On the other hand, the wanderers from the East, such as *Turdus naumanni**, *T. atrigularis, T. ruficollis, T. pallens,* and *T. sibiricus,* most of which have occurred several times in Europe, though more strictly belonging to the fauna of Central Asia, may be with propriety introduced into the European list as "accidental visitors." Some of the European species (such as *T. iliacus*) extend likewise far into Central and North-eastern Asia; but when we arrive in Amoorland and approach the confines of China, we find that a total change in the species has taken place. Out of the seven Thrushes recorded by Dr. v. Schrenck as found in this country, not one is a truly European bird; and in addition to the Siberian species already mentioned, we meet with *T. daulias* and *T. chrysolaus,* both originally described from Japanese specimens.

In Japan, *Turdus cardis* occurs, besides *Turdi sibiricus, daulias, fuscatus, pallens,* and *chrysolaus,* which have been already adverted to as likewise occurring more to the westward. In China, Mr. Swinhoe's researches† have already brought to light *Turdi sibiricus, daulias, pallens,* and *chrysolaus,* as being met with more or less regularly during the winter and spring migrations: *Turdus mandarinus* is a common resident, and represents our Blackbird: *T. cardis* occurs during migration, and was found nesting at Macao (*anteà,* p. 37). I am not aware that the more southern portion of the Palæarctic region furnishes any authenticated species besides those already enumerated, except the very singular hook-winged Blackbird, *Turdus dactylopterus* (*Merula dactyloptera,* Bp.), which is found in Asia Minor. We may therefore take the well-ascertained species of the genus belonging to the Palæarctic region as about sixteen in number, distributed somewhat as follows:—

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* Dr. v. Schrenck, who does not usually err on the side of admitting too many species, records in his 'Amur-reise' (i. p. 353) the occurrence in Amoorland of the true *T. naumanni* of Temminck (*T. dubius,* Naum., nec Bechst.), and states his decided opinion as to its distinctness from *T. fuscatus* of Pallas. The latter is figured as *T. naumanni* by Mr. Gould in his 'Birds of Europe' (vol. ii. pl. 79), as *T. fuscatus* in his 'Birds of Asia' (part iv.), and as *T. eunomus* by Temminck (Pl. Col. 514). The former (*T. naumanni,* verus) is figured in Naumann's 'Nat. d. Vög. Deutschl.' pl. 68. fig. 1, and pl. 358. fig. 2. I am inclined to think that Mr. Gould has done wrong in uniting these two species. *Turdus fuscatus* is a well-known Japanese bird, and, as Dr. v. Schrenck informs us, the "*commonest*" of all the genus in Amoorland. Of *T. naumanni,* on the other hand, but one example was obtained in Amoorland, and it appears to be a more western bird, which occasionally straggles into Europe. See Homeyer's article in 'Rhea,' ii. p. 155 *et seq.*, and Naumann's own explanations on this subject in 'Naumannia,' vol. i. pt. 3. p. 11, and pt. 4. p. 4.

† See 'Ibis,' 1860, p. 56, et 1861, p. 23.

Europe.	Asia Minor.	Siberia.	Amoorland.	Japan.	China.
viscivorus.	*viscivorus.*				
pilaris.	*pilaris.*				
		fuscatus.	*fuscatus.*	*fuscatus.*	
		naumanni.	*naumanni*		
musicus.	*musicus.*				
iliacus.	*iliacus.*	*iliacus.*			
			daulias.	*daulias.*	*daulias.*
		pallens.	*pallens.*	*pallens.*	*pallens.*
			chrysolaus.	*chrysolaus.*	*chrysolaus.*
		ruficollis.	*ruficollis.*		
		atrigularis.			
		sibiricus.	*sibiricus.*	*sibiricus.*	*sibiricus.*
			cardis.	*cardis.*	*cardis.*
merula.	*merula.*				
	dactylopterus.				
					mandarinus.
torquatus.					

Let us next take a glance at the Thrushes of the INDIAN region. On the southern slopes of the Himalayas we find three species intruding from Northern Asia—*Turdus fuscatus, T. atrigularis,* and *T. ruficollis,* and besides these, *Turdus hodgsoni* (hardly distinct from our Missel-Thrush), *T. albocinctus* (representing our *T. torquatus*), and *Turdi castaneus, boulboul, wardii, dissimilis, pelodes,* and *unicolor.* In the peninsula of India we meet with *Turdi simillimus* and *nigropileus,* whilst *Turdus wardii* also occurs there, and in the cold season *T. dissimilis* "is not rare in Lower Bengal*." The Ceylonese species of true Thrush appear to be *T. wardii* and *T. kinnisii,* the latter representing *T. simillimus* of India and our *T. merula.*

In the Malayan portion of the Indian region Thrushes are much less numerous. *Turdus rufulus* (*T. modestus,* Eyt.) is the only Thrush I have ever noticed in collections from Malacca. This bird, which, according to Mr. Blyth, ascends the peninsula as high up as Arracan (Journ. As. Soc. Beng. xvi. p. 144), is said by Drapiez to occur also in Java, and certainly ranges as far as Labuan, where Mr. Mottley obtained specimens, now in Mr. L. L. Dillwyn's collection. In Java also occur Temminck's *Turdus mutabilis*—a very close ally of *T. sibiricus*, but, according to Prince Bonaparte (Compt. Rend. xxxviii. p. 4), distinguishable from it—and Horsfield's *Turdus javanicus*, of which later synonyms appear to be *Turdus fumidus*, Müll., and *T. hypopyrrhus*, Hartlaub (Verz. Brem. Samml. p. 43). A nearly allied representative of the latter bird inhabits Timor, if the specimens are accurately labelled in the Leyden collection, and may be called *Turdus schlegelii* *, after the present eminent director of that establishment. Excluding therefore the three intruders from Northern Asia, the Indian Thrushes appear to be about fifteen in number, some of which (e. g. *T. pelodes* and *dissimilis*) require further comparison and examination.

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* Blyth in Journ. As. Soc. Beng. xvi. p. 145.

Himalayas.	India.	Ceylon.	Malacca.	Java.	Labuan.	Timor.
hodgsoni.						
			rufulus.	*rufulus.*	*rufulus.*	
				javanicus.		
						schlegelii.
	dissimilis.					
pelodes.						
unicolor.	*unicolor.*					
boulboul.						
castaneus.						
albocinctus.						
	nigripileus.					
	simillimus.					
		kinnisii.				
wardii.	*wardii.*	*wardii.*				
				mutabilis.		

In the Æthiopian region Thrushes are not so plentiful. There appear to be, at the present moment, only nine well-ascertained species known to occur in those portions of Africa and Asia which are within its boundaries; namely,—

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* Turdus schlegelii, sp. nov.

Turdus fumidus, Temm. in Mus. Lugdunens. (partim).

Pallide chocolatino-brunneus, abdomine castaneo, crisso eodem colore vix tincto: rostro et pedibus flavis: crassitie *Turdi javanici*.

Hab. In ins. Timor.

Mus. Lugdunensi.

Obs. Affinis *T. javanico* (sive *fumido*) et statura eadem, sed hic ventre imo albo, et crisso nigricante, albo striato differt.

N.E. Africa.	W. Africa.	S. Africa.	S.E. Africa.
			guttatus, Vig.
simensis, Rüpp.	*simensis*, Rüpp.	*simensis*, Rüpp.	
pelios, Bp.	*pelios*, Bp.		
		libonyanus, Sm.	
olivacinus, Bp.			
		olivaceus.	
	olivaceo-fuscus, Hartl.		
			smithii (*obscurus*, Sm.).
	apicalis, H.		

In the AUSTRALIAN region, as I have already stated, true *Turdi* are not at present known to occur in New Guinea or Australia. Mr. Gray has, however, lately described a *Turdus erythropterus* from Gilolo†; and a Blackbird occurs in the Samoan Islands, which is probably *Turdus vanicorensis*, Q. et G. In New Caledonia and some of the adjacent islands, a little group of Thrushes is found, which somewhat deviates in structure from the ordinary type, and will probably be ultimately separated from true *Turdus*. The species of this section at present known are—*Turdus xanthopus*, Forster, from New Caledonia, *Turdus vinotinctus* (*Merula vinitincta*, Gould, P.Z.S. 1855, p. 165), from Lord Howe's Island, and *T. nestor*, Gould, from Norfolk Island. We have, therefore, only five Thrushes in the Australian region.

In the New World, on the other hand, the genus *Turdus* is very fully represented. Upwards of forty species are distributed over the different parts of the Northern and Southern continents. In a paper read before the Zoological Society (see P. Z. S. 1859, p. 321 *et seq.*), I have given some account of the whole of the members of the family *Turdidæ* in the New World, and it will be the less necessary for me to say much about the subject on the present occasion, except so far as is wanted to complete an outline of the general distribution of the genus.

In the NEARCTIC region, forming the northern portion of the New World, the following may be taken as restricted to the Atlantic slope :—*T. mustelinus, pallasi, fuscescens, swainsoni,* and *aliciæ*. On the Pacific region opposite, we find *T. pallasi* replaced by *T. nanus*, and *T. fuscescens* by *T. ustulatus*, while *T. migratorius* also occurs, and besides it the well-marked species *T. nævius*. On the table-land of Mexico are found probably all or, at any rate, the greater part of these species (except, perhaps, *T. nævius*) as winter migrants, and on the western coast *T. flavirostris,* while *T. pinicola* inhabits the pine ridges of Southern Mexico. Three other species (*T. infuscatus, grayii,* and *assimilis*), which I have placed under the head of Mexico in my list in the 'Proceedings,' belong, I believe, to the *tierra caliente* exclusively, and must be set down to the account of the Neotropical region.

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† See P.Z.S. 1860, p. 350.

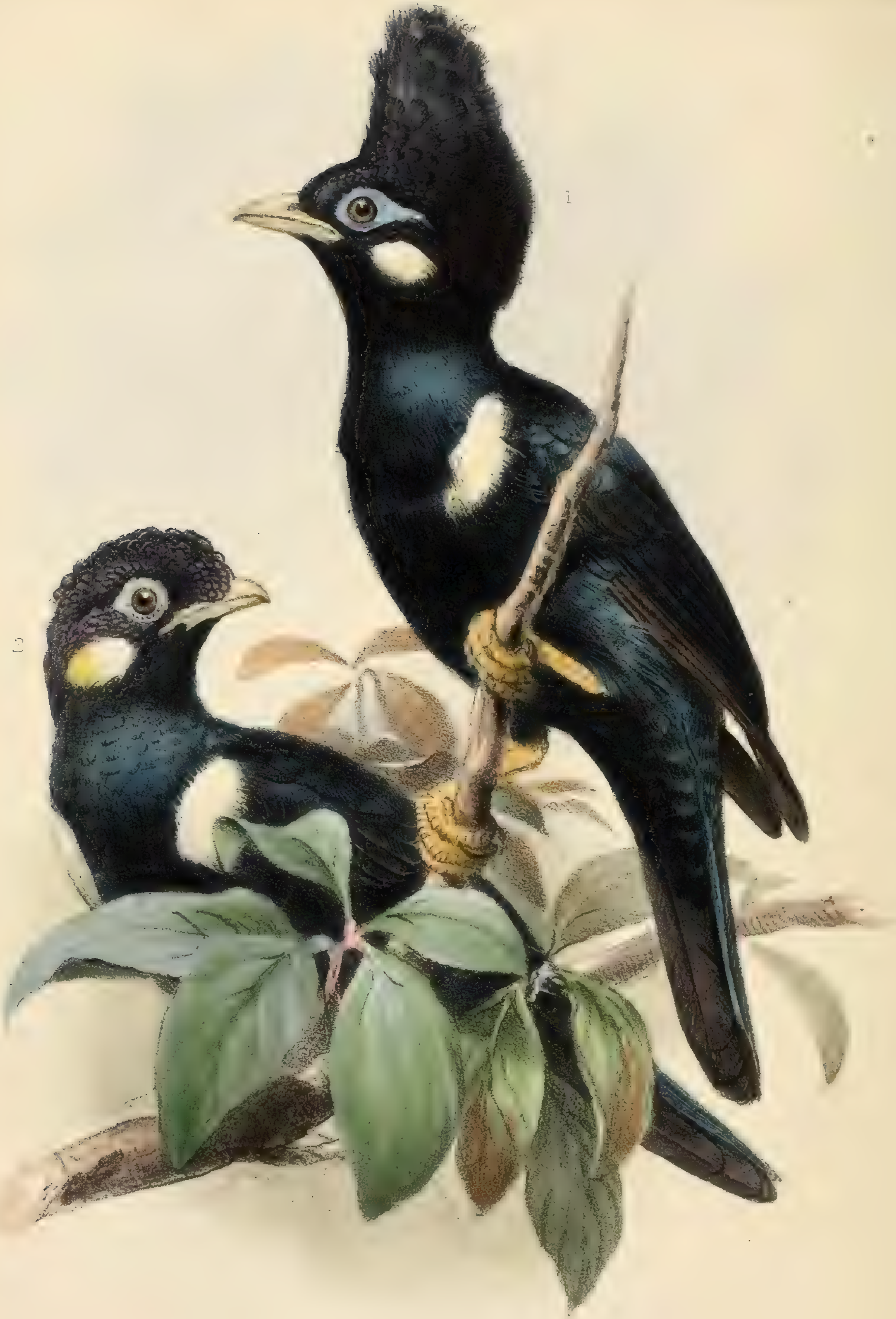
The Thrushes of the Nearctic region may therefore be estimated as twelve in number; viz.—

Eastern N. America.	Western N. America.	Table-land of Mexico.
migratorius.	*migratorius.*	*migratorius.*
	nævius.	
		flavirostris.
mustelinus.		*mustelinus.*
pallasi.		
	nanus.	
		silens.
fuscescens.		
	ustulatus.	
swainsoni.		*swainsoni.*
aliciæ.		
		pinicola.

If we exclude from the Neotropical region *Turdi migratorius, mustelinus,* and *swainsoni,* which are really only intruders from the north, we shall find left about twenty-seven species, distributed somewhat as follows:—

1. Southern Mexico.	2. Guatemala and Central America.	3. Antilles.	4. New Granada.	5. Chili, Peru, and Arg. Republic.	6. South-eastern Brazil.	7. Guiana.	8. Venezuela, Trinidad, and Tobago.
							xanthosceles.
infuscatus.	*infuscatus.*				*flavipes.*		*atrosericeus.*
	nigrescens.						
	rufitorques.						
			gigas.				
				fuscater.		[*thalmus.*	*olivater.*
				chiguanco.		*gymnoph-*	*gymnoph-*
	plebeius.	*aurantius.*			*fumigatus.*	*fumigatus.*	[*thalmus.*
grayii.	*grayii.*			*serranus.*			
			ignobilis.			*albiventris.*	
assimilis.	*leucauchen.*				*crotopezus.*		
			phæopygus.			*phæopygus.*	*phæopygus.*
					albicollis.		
		jamaicensis.		*falklandicus.*			
					rufiventris.		
			fulviventris.				

The general distribution of the genus *Turdus* over the earth, therefore, taking Mr. Wallace's revised areas (cf. 'Ibis,' 1859,



J Wolf, del et lith

M & N Hanhart, Imp^t

Fig. 1, BASILORNIS CORYTHAIX. Fig. 2. B. CELEBENSIS

p. 451), may be assumed to be nearly as follows, as far as we are at present acquainted with it:—

	Area in square miles.	No. of species of *Turdus.*	No. of sq. miles to each species.
1. Palæarctic	12,500,000	16	780,000
2. Indian	3,100,000	15	200,000
3. Æthiopian	6,500,000	9	722,000
4. Australian	2,600,000	5	520,000
5. Nearctic	5,500,000	12	458,000
6. Neotropical	5,600,000	27	207,000
The whole earth . .	35,800,000	84	426,000

Whence it plainly appears that the genus has attained its greatest degree of development in South America and India, and that the Palæarctic and Æthiopian areas are comparatively very poor in their number of species.

XXIX.—*On the Ornithology of Ceram and Waigiou.*

By Alfred R. Wallace.

(Plate IX.)

Ever since I arrived in the Moluccan seas (now four years ago), I have been repeatedly told, "if you want fine birds, go to Ceram;" and the same idea appears to prevail in Europe, for my correspondent writes me, "Mr. Gould and Mr. Gray both say the birds of Ceram are *very fine.*"

With such encouragement, it was with great expectations I started, in October 1859, for the south-western part of the island. What was my surprise to find one bird very plentiful that was not to be found in Amboyna, and *only one,* namely the *Tropidorhynchus subcornutus,* Temm.! There was absolutely nothing else; and the best birds of Amboyna, as *Tanysiptera dea* and *Lorius domicella,* were so scarce that I could not get a specimen of either of them. I changed my locality—I went into the very centre of the island; but still nothing new, and birds in general scarcer and scarcer. At last, however, after great exertions, I did get two more species new to me, *Eudynamys ransomi* and *Corvus violaceus*; and one, I believe, new to science, and very interesting

—a new species of *Basilornis**, a genus hitherto containing only a single Celebes species, which that of Ceram closely resembles, but has the crest much elongated and recurved. Of this interesting bird, however, I only got a pair of specimens. And that was really all that three months' collecting produced in much-vaunted Ceram.

It was, however, the eastern part of Ceram that I had heard most spoken of, and I determined to try again, and after nearly two months' delay, owing to illness in Amboyna, I started afresh. My first stopping-place was at Teluti, near the centre of the S. coast, which tempted me by its noble forests, lofty mountains, and rocky streams.

Four days' search, however, convinced me that all was barren; birds were scarcer than ever; and the natives were quite astonished at being asked about handsome birds, assuring me they knew of none in their country.

I then went on to Kissa laut, near the east end of the island, where I stayed a month, and obtained literally *not one species* new to me, and, moreover, none of the few good things that I had met with, though rarely, in W. Ceram. The forests and thickets were here most wretchedly depopulated of bird-life. Some half-dozen species, mostly noisy ones, were to be seen and heard, indeed, every day and everywhere, such as *Cacatua moluccensis*, the *Trichoglossus versicolor* (?), and *Eos rubra* (the only species of these genera found in all the great island of Ceram), and the *Buceros ruficollis* and *Tropidorhynchus subcornutus*. One may search for days, and literally see nothing else but these, with the *Carpophaga perspicillata* and *C. luctuosa* (?). Flycatchers, *Edolii*, Thrushes, Kingfishers, Warblers, Finches, are so scarce as to seem altogether absent. The few species that do occur are only seen singly, and at rare intervals.

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* Mr. G. R. Gray considers the *Basilornis* of Ceram to be the *Pastor corythaix* of Wagler. It must therefore stand as *Basilornis corythaix*; while the species of Celebes will retain Temminck's name, *Basilornis celebensis*. Both species are figured in the accompanying illustration by Mr. Wolf (Plate IX.), and their differences, which are sufficiently obvious, are pointed out by Mr. Gray, as follows. The two birds "are easily distinguished from one another by the form of their crests. That of Celebes possesses a short, compressed, keel-like crest, which extends from the culmen to behind the head, and is composed entirely of scale-like and convex feathers; whilst that of Ceram has an occipital, erect, and elongated crest, which, when viewed sideways, assumes somewhat of a subtriangular form, and is composed of truncated, rather broad and lax plumes. It also differs in having the nostrils exposed and a naked space round each eye. In the Celebes species the nostrils are covered by the frontal plumes, and there is scarcely any naked space round the eyes."—P. Z. S. April 23rd, 1861.—Ed.

On my return from Goram I spent ten days on the N.E. coast, but found nothing. I afterwards met with a gentleman, in the employ of the Dutch government, who is an amateur in ornithology, and has resided in Ceram more than a year, visiting the interior and the N. coast, with one or two hunters always engaged; but he seems to have met with scarcely anything more than myself. *Pitta* seems altogether absent; of *Psittaci* there is but one not found also in Amboyna, the *Platycercus amboinensis*; of *Ptilonopodes*, the two Amboyna species only, *P. viridis* and *P. superbus*. Leaving out *Psittaci*, I have only found 24 Passeres in Ceram, after a more extensive and laborious exploration than I have given to any other island.

The poverty in species and individuals of land birds exceeds anything I have hitherto met with, and seems very unaccountable. I think it must be partly due to the very little cultivation in the island, the population subsisting almost wholly upon sago.

Where there are and have long been extensive clearings of the forest, a different kind of vegetation is found, more fruit-bearing trees and shrubs occur together, and insects are more plentiful. In such localities, if virgin forest is close at hand, birds are almost always more abundant. I believe, however, that though my collection of the birds of Ceram is no doubt very incomplete, the poverty it displays is *real*, and will not be materially affected by future discoveries; and its cause is, I think, to be traced to the general character and origin of the whole Moluccan fauna (contrary to what has generally been supposed, a remarkably poor one), and to the peculiar geographical and geological antecedents of the island of Ceram. At some future time I hope more fully to enter into this subject.

My intention was to have continued my voyage as far as Ké, visiting all the small islands between it and Ceram, and I much regret that I was not enabled to do so; but the delay and trouble in getting boats and men from the native Rajahs was so great, that the East monsoon set in and drove me back on the way there. I stayed, however, about a fortnight on the two Matabello Islands (and I believe I am the first European who has ever touched there), and spent also a month at Goram, and in both of them I found several of the Ké birds which I obtained on my voyage to Aru two years ago.

The species of birds in these islands are very limited. A few New Guinea species occur (*Cacatua triton* and *Eclectus linnæi*), probably escaped and naturalized. The *Eos* and *Trichoglossus* are the Ceram species.

The *Carpophaga*, both at Goram and Matabello, is the fine species found at Banda and Ké. I sent it from Aru; but as it inhabits there only one small island nearest Ké, it has, no doubt, recently emigrated, and is not a true New Guinea bird. G. R. Gray identifies it with *C. chalybura*, Bp.; but this I doubt, as it certainly does not agree with the description in the 'Conspectus,' and the locality of *C. chalybura* (the Philippines) is much against its being the same.

In Matabello, the only *Ptilonopus* seems to be the *P. prasinorrhous*, Gray. In Goram the same species occurs, in company with the *P. viridis* of Ceram. The *Dicrurus* of Goram is a large species, very different from that of Ceram, and probably the *D. megalornis* of Ké. I am decidedly of opinion, therefore, that the Ké Islands do not belong to the New Guinea fauna, but, with Banda, Goram, and the intermediate islands, form a little subgroup of the Moluccas, perhaps also including Timor laut. None of them, as far as we know, contain a single true Papuan form, as *Rectes*, *Manucodia*, or *Cracticus*, which are found even in the smaller islands of Aru. The species peculiar to them should therefore be erased from the list of New Guinea birds.

The Cassowary occurs rather plentifully over the whole interior of Ceram, but I was never able to obtain or even see a specimen. In a native house I found an upper mandible and crest, which may perhaps show if it differs from the New Guinea species. A residence in the interior of Ceram with the indigenes might produce several novelties; but the too palpable poverty of the country would not permit me to bestow more time upon it, with the glorious Papuan region almost within sight.

Leaving Goram, therefore, I intended to go to Mysol, to visit my assistant Mr. Allen, who had been there three months, and then go on myself to Waigiou. My Goram crew, however, ran away, and I was detained, first in E., and then in N. Ceram. I afterwards had an adventurous voyage, in my little native prahaw purchased at Goram, being driven to leeward of Mysol, and then, when at anchor off an uninhabited island, our anchor (a native wooden one) broke in the coral rocks, we drifted away, and our two best sailors were left on shore. We could not possibly get back, as wind and current were against us; they alone knew the proper channels about Waigiou, and we were consequently eight days puzzling our way, in great peril, among the shoals and coral reefs. On reaching a village, we hired a boat and men to go to the island; but bad weather came on, and the boat returned in a fortnight, without having reached it. Again we induced them to go back, and in a fortnight more they returned with the two sailors, who had lived a month, naked, and eating only leaves, roots, and shellfish, having luckily found water, though the island was only about a mile in diameter.

I have written thus far in Waigiou. About the birds of Waigiou I will tell you when I have returned to Ternate.

Judging from the birds said to have been obtained at Waigiou by the French naturalists, I had expected to find it a very productive locality. *Epimachus magnus, Paradisea papuana, P. rubra, Diphyllodes magnifica, Cicinnurus regius, Lophorina superba, Parotia aurea,* and *Sericulus aureus,* are all mentioned as Waigiou birds. My disappointment may therefore be imagined when I discovered that the whole of these birds, with *one* exception, had been brought from the mainland of New Guinea (whither many of the inhabitants make an annual voyage), and that the sole representative of these gems of the New Guinea fauna was the *Paradisea rubra,* which is absolutely restricted to the island, where it takes the place of the *P. papuana* of the mainland.

I remained in Waigiou about four months, much hindered by excessive wet, and by having only a single gun good for anything. During the first two months, which I spent at Muka on the S. coast of the island, I obtained only two males of *P. rubra*. I afterwards visited the district of Bessir, where there are a few natives who catch the birds and prepare the skins, and obtained a very fine series in this locality.

The *P. rubra* is obtained in quite a different manner from the allied species of Aru and New Guinea. It is always caught alive by snares placed on the trees it frequents, and to a branch of which is hung the large red fruit of a species of *Arum*, of which the bird is very fond. The noose is placed in such a position that the bird must perch on it to get at the fruit; and it is attached to the branch by an ingenious slip-knot, so that when the end of the cord which descends to the ground is pulled, the bird is caught by the leg and dragged down. It may be thought that, the specimens being unwounded, and captured alive, I should obtain them in much finer condition than those that are shot; but such was not the case, and I have never been so much troubled with any Birds-of-Paradise as I was here. At first they were brought to me alive, bundled up in a bag, and with the plumage and tail-cirrhi terribly rumpled and broken. I then showed them how to perch them on a stick, attached by the leg; but then they were often brought dreadfully dirty, having been allowed to get among ashes or sticky dammar-torches during the time they were kept in their houses. In vain I begged them to bring the birds to me directly they were caught; in vain I begged them to kill them directly and hang them up. They would do neither, because it was a little more trouble. I had four or five men in my employ, who were paid in advance for a certain number of birds (the only way to get them). These men distributed themselves about the jungle, often a day's journey from the village, in search of good localities to set their snares. Having got one bird, they did not like the trouble of bringing it home, but would wait as long as they could keep it alive; and thus they often came to me, after a week or ten days' absence, with one bird dead and almost stinking, another freshly dead, and a third alive and just caught. Notwithstanding all my endeavours to alter this system, it continued in full force to the end. Luckily, however, the plumage of these birds is so firmly set that they are washed and cleaned more easily than any others, and thus a few hours' extra work was all their obstinacy cost me.

Having these beautiful birds brought to me alive, I, of course, made many attempts to preserve them. With my own hands I constructed a large cage in which they could move about freely, and tried every kind of food I could procure. The proper fruits were, however, scattered widely over the forest on lofty trees, and could not be obtained enough ripened with sufficient regularity. Rice and grasshoppers they soon came to eat pretty eagerly, and I was then in hopes of success; but on the second or third day they were invariably attacked by a kind of convulsions, fell off their perch, and soon died. I tried altogether seven or eight individuals, apparently in perfect health, and in every case with the same result. Some were full-plumaged, others without lateral plumes; but I could not obtain any very young birds, with which the attempt might probably have succeeded better.

The live birds were principally remarkable for their excessive activity and liveliness. They were in constant motion; and the brilliantly contrasted colours of the head and neck, with the erected crests and swelling throat, formed a most beautiful picture. I never saw the red lateral plumes fully expanded, and can therefore form no judgment as to their beauty. They were generally carried under the wing, rising a little over the back, with the white curved tips drooping over the end of the tail. The long flattened tail-cirrhi hang down in a graceful, spiral curve, which is produced by the general curved form of these feathers (which lay naturally in a complete circle reaching round to the head of the bird) combined with the semicylindrical sectional figure. These plumes pass through a variety of singular forms before they become fully developed. First they appear as simple cirrhi, like those of *P. apoda* and *P. papuana*: these have often a spatulate tip, as in *Momotus* and *Tanysiptera*. The rachis then becomes flattened out and slightly curved, and finally black, curved cylindrically, and entirely destitute of barb. In one singular example I possess, a single cirrhus has a spatulate feather tip to the fully-developed black whalebone-like rachis.

The *Paradisea rubra* differs from its allies in the colour of the bill, which is a pretty clear gamboge- or ochre-yellow, with a very faint greenish tinge; the iris is of a blackish olive; the feet dark reddish or fleshy olive; the claws horny. Its voice is very similar to that of its allies, but less shrill, and like them it seems to be very abundant in its native forests, though, from its activity and incessant motion, by no means easy to procure. I several times observed the adult males on low trees and among bushes only a few feet from the ground. They crept along the branches and up the nearly vertical trunks, apparently in search of insects, which, I believe, they only feed on when their favourite food, the "*warmgin*," or Indian fig, is not to be obtained. At these times they utter a low clucking note, very different to their usual shrill call, which seems always to proceed from the summits of lofty trees.

Epimachidæ are altogether absent from Waigiou. The nearest ally to the *Paradiseæ* is *Manucodia*, of which only one species is found. Of the rare Parrots imputed to Waigiou, *Psittacodis stavorini* and *Chalcopsitta rubiginosa*, I could see or hear nothing. In fact, I found no *Psittaci* that I had not previously obtained, and none but very common species. Of Pigeons I obtained many species, but few new. The most abundant *Carpophaga* was *C. sundevalii*, one of the hump-beaked group. The swelling seems equally large in both sexes. Three other New Guinea species occur, and also the Gilolo *C. perspicillata*. The *Ptilonopus prasinorrhous* of Ké and Goram occurred here also on the small islands, while on the mainland of Waigiou, *P. superbus* and the lovely little *P. pulchellus* are the characteristic forms. There is, I think, a new species, of which I got a male in Gagie Island, and which also occurred in Mysol, marked only with a vinous patch on the breast. Of the splendid *Ianthœnas halmaheira*, Bp., or a closely allied species, I obtained a single specimen, and also one of a species of *Eutrygon*. Of other birds I got scarcely anything new, besides one or two *Rectes* and *Myiolestes*, a fine *Podargus*, and one or two small birds. My whole collection only amounted to 74 species, almost all common New Guinea birds; and I unhesitatingly pronounce Waigiou to be the very poorest island in the New Guinea zoological region.

On my arrival in Ternate I found my assistant Mr. Allen, who had spent more than six months in Mysol, and it was with much anxiety I proceeded to examine his collection. I was much disappointed, however, in finding almost all my own birds over again, with the addition of a few Dorey species and about 15–16 new to me, mostly of the genera *Campephaga*, *Rectes*, *Myiolestes*, and a few Hawks,—a Rail, a Kingfisher, and the *Eos atra*.

Owing to his having to return to Ceram for rice, and waiting there two months till it arrived from Amboyna, he missed the season for the Paradise-birds, obtaining only a single *P. papuana*, a few *P. regia*, and of the third species which inhabits the island, *Diphyllodes magnifica*, only a native skin. Successive visits of several months each to four distinct Papuan districts have only produced me four species of Paradise-birds, while the general run of the birds is so nearly identical in all as to make a fifth visit absolutely profitless, except by obtaining the remaining species of these beautiful creatures. I have, however, at length obtained very precise information as to where the greater part, if not all, of my desiderata in *Paradiseæ* and *Epimachidæ* are to be obtained, and in a few days Mr. Allen starts for this locality with every requisite for a thorough exploration, in my own Goram prahaw, and accompanied by a lieutenant and two soldiers from the Sultan of Tidore to assist and protect him. If he does not succeed this time, I must give up the attempt in despair. He touches for a few weeks at Guebe, and on his return goes for a month to the Xulla Islands, which contain the *Babirusa*, but of which the fauna is otherwise totally unknown.

I myself leave by the next steamer for Timor Delli: on my return I spend two months at Bouru, where the *Babirusa* is also found; but whether its fauna is of the Moluccan or of the Celebes type, we are yet ignorant. In September we are to meet again here, to pack up our collections, and shall then finally quit the district of the Moluccas and New Guinea. Please make allowance for these hasty notes, written amid the confusion and fatigue of packing.

Ternate, Dec. 20th, 1860.

XXX.—*On the Diversity in the Estimate of the European* Ornis, *and its Causes.* By Dr. J. H. Blasius*.

It appears to me to be desirable that, from time to time, we should ascertain the point which we have attained by our joint endeavours. It is absolutely necessary that we should ascertain clearly what we are to regard as positively gained, and what we have to leave to the future as problems still to be solved. Our circumstances, our environments indicate to us as an important part of our endeavours the elucidation of European ornithology.

No land on the face of the earth has been more repeatedly examined than Europe. We often hear, and, indeed, we might justly suppose, that the ornithology of Europe is quite settled; but every one who possesses an accurate knowledge of the subject must declare this assertion to be a manifest error. In no branch of ornithology—neither in systematic division, nor in literary criticism, nor in the observation of modes of life, nor in oology—has complete agreement, certainty, or peace been arrived at. To refer to one only of these points, that of the systematic division and enumeration of species,—for nearly forty years, no single scientific investigation, perhaps, has led to such divergent results as this with regard to European ornithology.

We find enumerated in—

	In the year	Species.
Brehm, 'Lehrbuch'	1823	471
Bonaparte, 'List,' &c.	1838	503
Temminck, 'Manuel,' 2nd edit.	1840	499
Keyserling and Blasius, 'Wirbelthiere'	1840	484
Schlegel, 'Kritische Uebersicht'	1844	489
Thienemann, 'Rhea'	1846	470
Degland, 'Ornithologie'	1849	507
Bonaparte, 'Revue Critique'	1850	539
Brehm, 'Naumannia'	1855	950
and with the subspecies		1628
Brehm, 'Vogelfang'	1855	1030
and with the subspecies		1800
Bonaparte, 'Catalogue Parzudaki'	1856	581
De Selys-Longchamps, 'Revue de Zoologie'	1857	509
Keitel, 'Verzeichniss,' &c.	1857	501
Des Murs, 'Traité d'Oologie'	1860	536

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* This important paper is translated from the Report of the Thirteenth

This series of figures speaks for itself, but not much in favour of the healthy state of European ornithology. There must be something rotten in this "State of Denmark." A science which gathers such very different flowers from one and the same soil cannot twine itself a garland of them; they would be frail and perishable decorations, without a single evergreen leaf.

A variation from 470 to 1030, or even to 1800!—a fluctuation of double or quadruple!—such a result appears to me to be something more than a joke. Every unprejudiced and uninitiated person must with justice ask how this can be possible; he must see in the priests of the Ornis a repetition of the Roman Augurs who could not look at each other without laughing at their gods! It seems to me that we are standing on the brink of the bitterest earnest, and that wherever we wander must be in false paths or on bogs. It is our serious duty to seek the cause of the evil, in order that we may not expose ourselves in the pillory to an unprejudiced public opinion any longer than is necessary either as deliberate deceivers, or as unconscious night-walkers, or as delirious fever-patients.

Let us look at our question as objectively and with as little partisan-spirit as possible! The statistical criterion shows us, in the numbers above given, two well-marked and irreconcileable opposite statements:—one group of numbers varies between 470 and 581; the other between 950 and 1030. The numbers of each group differ amongst themselves in nearly the same proportion; but the second group is nearly double the first. It must be evident at once even to the most unlearned that the opposite statements of these different groups are founded upon quite different data, upon quite irreconcileable principles. On which side is the right? or, in case both are in error, which side comes nearest to the truth?

The majority of ornithologists is on the side of the first, or smaller group:—all against one! Even the arithmetical mean of all the statements, 578, is on the same side! The judgment of those who decide objective probabilities by numbers cannot be a matter of question.

Meeting of the German Ornithologists' Society held at Stuttgardt in 1860, of which we shall give further particulars in the next Number.—Ed.

On the side of the majority stands, besides all other ornithologists, Brehm's 'Lehrbuch,' published in 1823; on the other side stands Brehm alone, in the 'Naumannia' and the 'Vogelfang' of the year 1855. So far as any conflict of principles is in question, therefore, we have to do with a struggle between the entire science of ornithology up to the present time, and the most recent views of Brehm. The contradictions depend essentially, although not entirely, upon this conflict of principles.

The previous estimate of the European Ornis falls into two series of very different values—the species regularly inhabiting Europe, and those accidentally visiting that continent. The species not regularly belonging to Europe require merely a sort of police-notice, or domiciliation—we have simply to do with the question whether we shall give a place in our books and catalogues to the exotic species which may wander into Europe, or pass them by unnoticed. If they be left unnoticed, the question as to the estimation of the European Ornis becomes greatly simplified.

If, as is almost universally the case, the stray immigrants are to be noticed, their acceptance depends simply on the proof of their voluntary appearance in Europe, without importation. Imported birds, or exotic birds escaped from confinement, have no right to a place in our Ornis. The occurrence of *Spiza ciris*, L., in England, of *Parra jacana*, L., in the south of France, of *Nycterodius violaceus*, L., in England, of *Plectropterus gambensis* in France, of *Erismatura ferruginea*, Eyton, in Belgium, of *Halieus sulcirostris*, Brdt., and of many birds commonly kept in aviaries, may remain unnoticed without the least objection.

The number of voluntary immigrants, the occurrence of which in Europe is positively ascertained, amounts at the present moment to a little over 100 species. It has become greater nearly every year, and may be expected to continue increasing.

These species are distributed as follows, according to their native countries and the various natural orders :—

	Asia.	N. Africa.	N. America	Totals.
Raptores	0	5	2	7
Clamatores	1	0	3	4
Oscines	20	8	10	38
Columbæ	1	0	1	2
Gallinæ	1	0	0	1
Grallæ	5	8	12	25
Natatores	4	10	16	30

Some few of these species occur both in the north-east of Africa and the south-west of Asia, or in the north of Asia as well as in North America, so as to render their origin not quite certain.

Besides these, nearly 70 other exotic species have been received into the European fauna by different ornithologists, without the least justification; these must be omitted in our summaries.

About 25 of them were introduced as European by Bonaparte and Brehm merely on supposition, on the ground of the possibility of their occurrence; as, for example,

Gyps rüppellii, *Br.*
Aquila brehmii, *Br.*
Cotyle cahirica, *Würt.*, *Br.*
Turdus libonyanus, *Br.*
Otocorys bicornis, *Br.*
Carduelis orientalis, *Br.*
Chrysomitris pistacina, *Bp.*
Corvus umbrinus, *Br.*
Podoces panderi, *Bp.*
Zenaida carolinensis, *Br.*
Ægialites indicus, *Br.*
Hypsibates leucocephalus, *Br.*
Totanus guttifer, *Bp.*
Rhynchæa variegata, *Br.*
Halieus africanus, *Br.*
Uria carbo, *Bp.*
Mormon corniculata, *Bp.*
&c.

Upon the arbitrary principle of such an augmentation of the European fauna there can only be one opinion—that it is not legitimate! Is not almost anything *possible*? Let us wait, therefore, until it has actually taken place.

A great many exotic species have been erroneously received into the fauna of Europe, either by mistaking one for another, or entirely without reason. Criticism has definitely decided upon most of them and excluded them, but we find them for the most part still carried on in the most recent catalogues, as if there were no doubt about their occurrence. Amongst these we reckon,—

Falco peregrinoïdes, *T.*
—— sparverius, *L.*
Haliaëtus leucocephalus, *L.*
Ulula nebulosa, *Forst.*
Caprimulgus atrovirens, *Laud.*
—— climacurus, *Vieill.*
—— virginicus, *Briss.*
Hirundo senegalensis, *L.* (capensis, *Gm.*).
Parus atricapillus, *Gm.*
—— bicolor, *L.*
Troglodytes fumigatus, *T.*
Uragus sibiricus, *Pall.*
Corvus dauricus, *Pall.*
—— ossifragus, *Wils.*
Peristera semitorquata, *Gm.*
—— lugens, *Rüpp.* (risoria, *L.*).
Eurynorhynchus pygmæus, *L.*
Ardea herodias, *L.*
Buphus russatus, *T.*
Pelecanus mitratus, *Licht.*
Dysporus melanurus, *T.* &c.

It would be a just requirement of the ornithological public from its writers, or of the latter from themselves, that they should only admit positively ascertained species into the fauna of Europe, and finally consign ascertained errors to oblivion. This certainly does not offend against any internal conviction, or against a principle carried out to its consequences. The question regards only a vacillation between a mere external scrupulous completeness in name, or simple, non-critical carelessness, and positive adherence to fact.

It is only when we remove the whole of the exotic species, or at least those which have been erroneously admitted, that we can see clearly how far the different numbers of the summary above given are caused by diversity of fundamental views, by mutually opposed principles or requirements.

If we deduct the whole of the exotic species observed occasionally in Europe, there remain in

Thienemann, 'Rhea'	401	species
Keyserling and Blasius, 'Wirbelth.'	424	,,
Schlegel, 'Krit. Uebersicht'	430	,,
Brehm, 'Lehrbuch'	450	,,
Bonaparte, 'Revue Crit.'	463	,,
Des Murs, 'Traité'	466	,,
Bonaparte, 'Catalogue P.'	500	,,
Brehm, 'Vogelfang'	940	,,
and with the subspecies	1700	,,

as regular inhabitants of Europe. There is no essential change in the proportions above given; the statements vary from double to quadruple the average number. Here also occurs again the same abrupt and irreconcileable opposition of the majority of ornithologists to Brehm's position since the year 1855 : between Thienemann and Bonaparte there is a difference of 100; between Thienemann and Brehm of 540 species. The gap between these numbers must have its origin in principles, or in a diversity of views as to the separation of species.

If we examine the group of smaller numbers, we find that it contains essentially four different sections :—

1. Thienemann, with 401 species as the minimum.
2. Keyserling, Blasius, Schlegel, and De Selys, with 424–430 species.
3. Bonaparte, 1850, and Des Murs, with 463–466 species.
4. Bonaparte, 1856, with 500 species.

Amongst the species cited by Thienemann there are but few that are open to doubt,—such, for example, as *Sitta uralensis,* Licht.; *Sylvia sarda,* Marm.; *Anthus cervinus,* Pall.; *Glareola melanoptera,* Nordm.; *Podiceps arcticus,* Boié; and *Uria hringvia,* Brünnich,—in respect of the determination of the species, and *Ixos obscurus,* T., and *Lanius tschagra,* Vieill., with regard to the domicile. In the union of the Crossbills he goes very sharply to work, but not entirely without reason. In other unions he is decidedly wrong,—for example, in that of *Circus cineraceus,* Mont., and *C. pallidus,* Sykes. Numerous new discoveries since the year 1846 would have brought his list pretty accurately to the position of those under No. 2. This position is exceeded by the lists under No. 3 by about 40 species, and by that under No. 4 by about 80 species.

After carefully comparing all known facts, I find that the European Ornis consists, in round numbers, of 425 indubitable species of birds breeding in Europe (*Brütvögeln*), besides 60 varieties or races, which are frequently regarded as species, and about 100 exotic species. These 60 varieties, which are somewhat increased in Bonaparte's Catalogue, form the still doubtful specific element in the European fauna, if we follow the majority of ornithologists. They constitute almost exactly the eighth part of the total valuation. By the application of rigorous principles the number may be still greatly reduced.

Up to the year 1820, and, with few exceptions, even up to the year 1840, ornithology, in its conception of species, was developed exactly in analogy with the rules followed in other branches of zoology. The spirit of Linné, Pallas, and Cuvier ruled the entire domain of zoology. As soon as ornithology hastened forward with more rapid strides, it began to emancipate itself from other branches of zoology, and struck, as regards the conception of species, into a totally different course. The majority of ornithologists of note troubled themselves but little, or not at all, with other departments of zoology; they found no check upon their efforts in the stricter conception of the other classes of animals; their conception of species became constantly more and more isolated and, in course of time, looser and less careful in comparison with the prevailing zoological procedure.

For a long time Brehm was the only ornithologist who followed this bolder conception as a matter of principle. Towards the close of the year 1840, Bonaparte also gradually acquired the same taste; but he never went so far as that he could have formed a bridge between Brehm and the other ornithologists. In his fundamental views he entirely belonged to the opposite school in ornithology, and vacillated only as to the signification of some local races differing in colour, but similar in form. Gloger, Schlegel, and Thienemann still endeavoured to maintain the old classical zoological point of view.

If we examine the ornithological species-question from this zoological point of view, the gap between the two extreme schools becomes still more distinctly marked. Of the above-mentioned 60 doubtful forms, which are regarded by most zoologists as varieties, by many ornithologists at different times as species, about 50 would decidedly have to be united with the allied forms. Scarcely ten of these forms would remain as still fluctuating zoologically. According to the views which have hitherto been followed practically by Schlegel, Gloger, and Thienemann, to which I may add my own, the European Ornis would consist of about 425 certain species, 10 doubtful forms, and 100 exotic immigrants.

On the other hand, Brehm, in his "Vogelfang," cites, besides these 420 certain species, 520 others, of which the boldest ornithologists of the opposite party mention 60 at the outside, and besides these again, nearly 1400 subspecies. The number of species not certainly well founded with Brehm is fifty times, and that of the subspecies one hundred and forty times, as great as with those ornithologists who form their opinions in accordance with strict zoological notions.

Reichenbach and Brehm assert that the notion of the species is subjective: whoever requires a more convincing proof, overleaps the bounds of discretion.

Strictly speaking, the only objectively distinct forms presented by nature are the individuals. All further conceptions are subjective views—separations on account of differences observed or supposed to be observed. These differences belong *objectively* to animals; their estimation and relative valuation is exclusively a *subjective* affair. It is a matter of subjective choice whether we separate the Ostrich-like birds from the other birds as a distinct class, or unite them with them; it is a matter of subjective choice whether we separate the Herons as an order from the other Grallæ, and the Ducks from the other Natatores, or place them together; it is a matter of subjective choice whether we leave the Linnean genera *Falco* and *Strix* in their original condition, or break them up into many genera, and so forth. Lastly, it is a matter of subjective choice whether we separate individuals as species, which only differ from each other by a different state of plumage or a different coloration,—e. g. *Haliaëtus leucoryphus*, Pall. (*unicolor*, Gray), and *H. macei*, Temm., or *Larus heinei*, Hom., and *L. canus*, L., or *Ægialites homeyeri*, Br., and *Æ. hiaticula*, L.; one of them may be converted into the other in time. It is a matter of subjective choice whether or no we separate *Charadrius pardela*, Pall., from *C. hypomelanus*, Pall. In the case of living animals we need only wait a few months to see how, in the same individual, the one bird becomes converted into the other. It is a matter of subjective choice to separate *Alauda semitorquata*, Br., from *A. tartarica*, Pall., as the one form agrees exactly with the female of the other. In the above-mentioned cases I believe it is possible to come to a perfectly concordant view, although at present this does not exist throughout. Nature presents conditions which may bring about a common conception; but she also presents objective differences, which in separate individuals have, in fact, caused the young, or the female, or the winter dress to be regarded as specifically distinct. In these cases coloration is less decisive than the force of the conditions of life and development; where the latter are not known, it would be well to depend rather on the form than on the colour. *Mergus merganser* has been met with paired with *Anas clangula*; it would be subjective and arbitrary, but possible, and therefore, from the subjective point of view, also justifiable, to regard the two as one species. In this case also we should have to depend rather on the form than on the isolated objective fact.

Whoever regards the notion of the species as subjective is empirically right; but whoever thereby means to deny to the idea of species any objective foundation, is certainly in error. The dictum "the species is subjective" has therefore truly no signification at all. Any one may with equal right assert the opposite.

The objective data for the practical application of the idea of species lie in the general nature of the animal—in the form, size, marking and coloration, in the manifestations of life, in the development and reproduction of the animal. We know that not a single one of these peculiarities in one and the same species is rigidly concluded at a single point,—we know that in all properties variations may occur in one and the same species. For the idea of the species, it is, in fact, requisite that concordance should occur within the limits of such vacillations, which cannot be established *à priori*; but that with respect to all other species, a sharply-defined boundary, free from all gradual transitions, must occur. When both these objective conditions are fulfilled, we are justified in ranging any totality of individuals under the same specific idea.

The objective specific conditions may be fulfilled in very different ways and in very different degrees. Whoever makes very small requirements, and judges from an isolated peculiarity which has acquired no significance in the totality of the organism (separating, for example, the young or the female from the old male, the small Sparrow-Hawk from the large one, the brown Screech-Owl from the grey, or the grey-capped House-Sparrow from the brown-headed one), is of course subjectively justified in making species; but his species possess a less degree of objective justification than those established in accordance with more rigorous requirements. The principle of the separation of species is in all cases essentially the same; in respect of its practical application, we can only hold different views as to the degree of requirement, and this diversity is purely subjective.

The abrupt gap between the two schools is considerably enlarged, if we differ also in the principle and not merely in the degree of requirement. The dominant zoology universally assumes that different species must be actually different in their properties—that is to say, separated by well-defined limits in their characters. This, however, is not theoretically the view of the freer unbridled ornithology. In this it stands as a theoretical principle that nature everywhere presents transitions between species, as between subspecies. With this therefore every kind of objective conception falls to the ground. The only means of comprehension that remains consists in the comparison of individuals lying before the observer. The ornithology which proceeds on the principle of allowing universal transition, and sets lax requirements on the species, runs the danger of becoming incapable of being checked by others, and thereby necessarily renouncing all further influence in favour of a deviation. It is throughout of a subjective nature, and therefore not communicable.

From this it follows, in my opinion, that it must remain without results, as, indeed, it has hitherto done, to dispute as to the boundaries of species in the two distinct ornithological schools. All that can be done towards an elucidation is to indicate the irreconcileable degree of the diversity in the two tendencies and to establish a synonymy for both views.

Both the digressing sects do well when they avoid all disputes; when they at the utmost confine themselves to ascertaining what objective matter of fact runs parallel to the two different subjective views. This is the only question on which unity can be attained on both sides, although not to the satisfaction of both parties.

All that the ornithologists with more rigid requirements can do in this direction for the advancement of their science is that they should come to an understanding among themselves as to the way in which the so-called local races, about fifty in number, had better be regarded,—that they should bring together the material which is still necessary to enable them to come to a final judgment upon about ten still uncertain forms,—and that they should subject any exotic immigrants to be added to the fauna to a strict criticism.

On these points it appears to me that a concordant judgment may be arrived at.

XXXI.—*Recent Ornithological Publications*[*].

1. ENGLISH PUBLICATIONS.

SIR JOHN RICHARDSON's volume on the Polar Regions[†] contains a notice of the birds met with in Spitzbergen (p. 210), and a short chapter devoted to the Zoology of the Arctic Circle generally. "Excluding merely the points where the woods cross the Arctic Circle," says the author, p. 278, "the polar region presents a uniformity in its native birds in all meridians. All the birds that frequent the high latitudes are natives, and, though their stay at the breeding-places does not exceed three months, they are to be considered as merely visitors in the southern regions, which they traverse in going and coming during the remaining nine months of the year." This, we believe, is pretty nearly true, as far as it goes; but a really good and succinct account of Arctic Zoology is still a desideratum, and would form a very acceptable addition to our knowledge of geographical distribution.

We do not propose here to enter into the general merits of Mr. Du Chaillu's account of his travels in Equatorial Africa[‡]. That his work has produced much hostile criticism our readers are well aware. But no ornithologist, who is acquainted with the progress of his favourite science during the past few years, can be ignorant that Mr. Du Chaillu has discovered some remarkable novelties in the order of Birds, whatever he may have done in Mammals. In this branch of his investigations, however, he has had the advantage of the services of Mr. John Cassin, the well-known Ornithologist of the Academy of Natural Sciences of Philadelphia, who has thoroughly worked at his specimens, and has been able to discriminate between what was really new, and what were merely more perfect examples of already named species. Mr. Du Chaillu's narrative contains several notices concerning some of the more important species which he discovered, to which we must call our readers' attention.

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[*] Want of space has compelled us to defer the notice of several works until the next Number.—ED.

[†] The Polar Regions. By Sir John Richardson. Edinburgh, 1861, 1 vol. 8vo.

[‡] Explorations and Adventures in Equatorial Africa. By Paul B. Du Chaillu. London, 1861.

The new Guinea-fowl (*Numida plumifera**) "is very shy, but marches in large flocks through the woods, where the traveller hears its loud voice. It utters a kind of 'quack,' hoarse and discordant, like the voices of other Guinea-fowls. It avoids the path left by travellers; but its own tracks are met everywhere in the woods it frequents, as the flock *scratch* and tear up the ground wherever they stop. It is strong of wing, and sleeps by night on the tops of high trees, a flock generally roosting together on the same tree. When surprised by the hunter they do not fly in a body, but scatter in every direction. Thus it is a difficult bird to get, and the natives do not often get a shot at it."

Of the *Phasidus niger*, remarkable as being the nearest approach in the Æthiopian fauna to anything like a true *Gallus* or *Phasianus*, Mr. Du Chaillu tells us that when he met with it for the first time in the woods, he thought he saw before him a domestic fowl. "The natives have noticed the resemblance too, as their name for it shows—*couba iga*, signifying wild-fowl. *Wild* they are, and most difficult to approach; and also rare even in the forests where they are at home. They are not found at all on the sea-coast, and do not appear until the traveller reaches the range of fifty or sixty miles from the coast. Even there they are so rare that, though I looked out for them constantly, I killed but three in all my expeditions. They are not gregarious, like the Guinea-fowl, but wander through the woods—a male, and one, or, at most, two females in company. They are very watchful, and fly off to retreats in the woods at the slightest alarm."

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* For a good figure of this species and the *Phasidus niger*, see 'Journal of the Academy of Natural Sciences of Philadelphia,' new series, vol. iv. pls. 2 & 3. In the same work (pl. 49) are also representations of two beautiful *Meropidæ* discovered by Mr. Du Chaillu, *Meropogon breweri* and *Meropiscus mülleri*; and in the following plate are figured some very remarkable species of *Muscicapidæ*.

Another remarkable type, for the discovery of which we are indebted to Mr. Du Chaillu's exertions, is the *Alethe castanea*, belonging to the Ant-eating series of the Old World, which embraces *Ixos* and its allies. Of this bird we find the following notice, p. 273:—

"Hunting in the rear of the village, on the 15th, I shot a curious bird, the *Alethe castanea*, a new species. It is said by the natives to have a devil in it—for what reason I could not discover; probably for none. But its habits make it singular. They fly in a small flock, and follow industriously the Bashikouay ants in their marches about the country. The bird is insectivorous; and when the Bashikouay army routs before it the frightened grasshoppers and beetles, the bird, like a regular camp-follower, pounces on the prey, and carries it off. I think it does not eat the Bashikouay."

Mr. Du Chaillu likewise confirms (p. 131) what Dr. Hartlaub has previously reported, on the authority of Pel, as to the habits of *Gypohierax angolensis*, that they are those of the Fishing-Eagles (*Haliaëtus*).

2. French Publications.

We have seen the 2nd, 3rd, 4th and 5th numbers of MM. Jaubert and Barthélémy La-Pommeraye's 'Richesses Ornithologiques de Midi de la France,' of which we have already noticed the first part ('Ibis,' 1859, p. 201). They contain much useful information to the student of the European Avifauna.

M. Sallé has printed a carefully-prepared sale-list of his Mexican birds*, which we are sure he will willingly forward to any of our correspondents who may desire to consult it. M.

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* Liste d'Oiseaux à vendre provenant des chasses faites en Amérique. Par M. A. Sallé, 13 Rue Guy de la Brosse, à Paris.

Emile Parzudaki's 'Catalogue des Trochilidés' is another printed list of the same character, which those ornithologists who are studying the group of Humming-birds would do well to apply for. M. Parzudaki has a very large series of skins of this group of birds on sale.

3. Russian and Scandinavian Publications.

Herr Magnus von Wright's "Birds of Finland*," of which the title was mentioned in our January Number ('Ibis,' 1861, p. 111), forms the fifth part of the 'Bidrag till Finlands Naturkännedom, Etnografi och Statistik,' issued by the Finnish Scientific Society, and, as far as it goes,—for the part published only comprehends the Land-Birds,—will be found a very useful account of the ornithology of that country. As might be expected, the character of the Avifauna of each side of the Baltic is very much the same, and we think the author has done well in making such constant reference to Nilsson's well-known 'Skandinavisk Fauna.' But, according to Herr von Wright, *thirty-two* species occur in Sweden or Norway which have not been met with in Finland, though further observation will no doubt tend to reduce this inequality, since several birds of Asiatic origin have never been obtained in the latter country, though they must probably have passed through it to reach the other shore of the Gulf of Bothnia. Among these we may instance the two species of *Oreocincla*, *O. aurea* and *O. heinei*, Bp. (the latter erroneously called by our author *Turdus lunulatus*), *Parus cyanus*, *Emberiza aureola* and *Turtur rupicola* (Pall.), and *Columba gelastes*, Temm., the last of which may perhaps be expected some day in England. Of birds of southern or western range which do not seem to reach Finland, the more noticeable are *Falco milvus*, *F. rufus*, *Strix noctua*, *S. aluco*, and *S. flammea*, *Sylvia luscinia*, *S. tithys*, *S. locustella*, and *S. arundinacea*, *Motacilla boarula*, *Saxicola rubicola*, *Regulus ignicapillus*, *Emberiza miliaria*, *Picus viridis* and *P. medius*, *Alcedo ispida*, *Merops apiaster*, and *Columba livia*.

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* Finlands Foglar, hufvudsakligen till deres drägter, beskrifna af Magnus von Wright. Förra Afdelningen. Helsingfors, Finnska Litteratur-sällskapets Tryckeri, 1859. 8vo, pp. 315.

The only species included by our author, which he says has not been noticed either in Sweden or Norway, is *Falco ater*; and this can scarcely be said to be a Finnish bird, though it occurs in tolerable plenty from the neighbourhood of Lake Onega northwards to Archangel.

We notice with pleasure (page 97 *et seq.*) the acknowledgment willingly rendered to the services of our countrymen, the late Mr. Wolley, and Mr. H. Dresser (the latter in company with two Finnish gentlemen), in discovering the nidification of the Waxwing (*Ampelis garrulus*, L.), of which the particulars have been given at length in this Journal.

Herr von Wright thinks himself justified in considering the Titmouse of Scandinavia, usually known as *Parus sibiricus*, distinct from the Siberian bird to which that name was applied by Gmelin, and accordingly continues to the former (the European one) Lundahl's appellation of *P. lapponicus**.

The work is written in Swedish, which is an additional recommendation, as had it been in the Finnish language it must have remained almost a sealed book to naturalists, few of whom we should imagine have time to spend in mastering the grammar of a tongue in which the *nouns have thirteen cases*!

The volume of Scientific Communications published by the Natural-History Union of Copenhagen, for the past year†, contains (page 306) a paper by Professor J. Reinhardt on the example of *Syrrhaptes paradoxus* which was shot in Jutland, as has before been mentioned in our pages ('Ibis,' 1860, p. 109, *note*), and also (page 335) a notice of some recent additions to the ornithology of Greenland, all of which, however, are included in the valuable list of the birds of that country, with which that learned naturalist has enriched our present volume.

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* Sällsk. pro F. et Fl. Fenn. Förhandl. 1848, p. 1.

† Videnskabelige Meddelelser fra den naturhistoriske Forening i Kjöbenhavn, for Aaret 1860. Udgivne af Selskabets Bestyrelse. Andet Aarties anden Aargang. Kjöbenhavn, 1861.

XXXII.—*Letters, Extracts from Correspondence, Notices, &c.*

We have received the following letter:—

To the Editor of 'The Ibis.'

Fordingbridge, June 1st, 1861.

Sir,—Since my letter to you in February, which appeared in the last Number of 'The Ibis,' I have had an opportunity of inspecting the third edition of Mr. Hewitson's work on the Eggs of British Birds, and now beg to offer a few remarks, which, I hope, may result in the acquisition of a reliable list of British birds, properly so called.

	Species.
There are figured in the 3rd edition of Hewitson	286
Enumerated in 'The Ibis' List of Desiderata	35
	321
But we must deduct the Snowy Owl and Bewick's Swan, as they are figured in Hewitson and also occur in 'The Ibis' List of Desiderata	2
	319
In the 'Zoologist' List, and not occurring in Hewitson, or 'The Ibis' List of Desiderata, there are	34
In the 3rd edition of Yarrell, but not in the above 'Ibis,' 'Zoologist,' or Hewitson's Lists	5
Noticed in 'The Ibis' and in none of the above Lists	2
Total number of Birds regarded as British by various authorities	360

Now, there is no doubt that all Hewitson's figures of eggs are those of *British* birds, and that all the birds in 'The Ibis' List of Desiderata are really *British*. In order somewhat to narrow the point at issue, I will now enumerate those species which occur in the 'Zoologist' list, in the 3rd edition of 'Yarrell,' and in the last two Numbers of 'The Ibis,' but which are not mentioned in the 3rd edition of Hewitson, or in 'The Ibis' List of Desiderata, as amongst these must be found those which, without sufficient reason, have obtained a place in the British list—some, perhaps, through mistake, some on slender evidence, and some in consequence of having been improperly regarded as distinct species.

The following list must also of necessity contain those species of British birds whose eggs have been discovered since the 3rd edition of Hewitson was published; and these were stated to be at least eight in number, in 'The Ibis' for October 1859.

List of Birds occurring in the 'Zoologist' List, but not mentioned in Hewitson's 3rd edition, or 'The Ibis' List of Desiderata.

1. Greenland Falcon.
2. Rufous Sedge Warbler.
3. Bohemian Waxwing.
4. American Cuckoo.
5. Belted Kingfisher.
6. Purple Martin.
7. Passenger Pigeon.
8. Sand Grouse.
9. Barbary Partridge.
10. Cream-coloured Courser.
11. Andalusian Hemipode.
12. Little Egret.
13. Buff-backed Heron.
14. Squacco Heron.
15. American Bittern.
16. Yellow-shanks Sandpiper.
17. Bartram's Sandpiper.
18. Sabine's Snipe.
19. North American Stint.
20. Mate Swan.
21. Polish Swan.
22. Bimaculated Duck.
23. Surf Scoter.
24. Red-crested Duck.
25. Paget's Pochard.
26. Smew.
27. Hooded Merganser.
28. Ringed Guillemot.
29. Swift Tern.
30. Sooty Tern.
31. White-winged Black Tern.
32. Masked Gull.
33. Laughing Gull.
34. Dusky Shearwater.

Mr. Yarrell.

35. American Mottled Owl.
36. Red-winged Starling.
37. Great Spotted Cuckoo.
38. Virginian Quail.
39. American Scaup.

In 'Ibis.'

40. Serine Finch.
41. American Meadow Starling.

Now, Sir, if you, or any of your valued contributors, will inform me, in the next Number of 'The Ibis,' or in any other way, how many of the forty-one species enumerated above ought to be considered British, and at the same time how many of the forty-one species have had their eggs discovered since the 3rd edition of Hewitson was published, I shall feel greatly obliged.

I may add, in conclusion, that I think 'The Ibis' List of Desiderata is capable of a little legitimate enlargement. Take, for instance, Sabine's Snipe, which certainly, as I believe, has undoubted claims to rank as a British bird, and, so far as I know, the egg of which has not yet been obtained. Nevertheless this bird, which "does not seem to have fallen into the hands of any naturalist out of the British Islands [*]," finds no place in 'The Ibis' List of Desiderata [†].

Yours, &c., BEAVEN RAKE.

A letter, addressed to the Editor by Mr. J. J. Monteiro, who has already done good service in Angolan [‡] ornithology, is dated from the province of Cambambe, Angola, February 6th, 1861, and says,—

"I have only time to pen these few lines to inform you that I am well, and that, despite the rainy season (now at its thickest), I have already managed to preserve thirty skins of different species of birds. Nearly the whole are different from those I collected and noticed before at Bembe. Amongst the skins are several which I think are new, and all are very beautiful. Amongst those I suppose new is a Great Kingfisher from the River Quanza (Coanza of English maps). None of the descriptions of Kingfishers in Swainson's 'Birds of Africa' (the only work I have at present with me) accord with my specimen. Another good piece of news is, that 'Plantain Eaters,' and said to be of several species, abound within a few miles of my present locality, and so '*get-at-able*' that I have already purchased two live specimens of the *Corythaix erythrolophus*, of which one is in perfect health, and the other dead. As soon as the rainy season is over, I will obtain more skins, and very likely some new species.

"Please send my kindest regards to Dr. Hartlaub, and tell him that it would do him and you good to come and spend a few months on the magnificent river Coanza—magnificent not so much in size or body of water, as in vegetation, scenery, and ornithology.

"I am, unfortunately, removed from the vicinity of its finest part, which is as far as Cambambe (the fort and station of), though within a very few miles north of its unnavigable part. I am about thirty to forty miles west of Pungo Andongo."

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[*] *Vide* Yarrell's British Birds, 2nd edit. p. 42.

[†] Sabine's Snipe is considered, we believe, by the best authorities to be merely a melanism of the Common Snipe.—ED.

[‡] Cf. P. Z. S. 1860, p. 109.

Mr. Wallace's letters from Ternate (of December 10th, 1860), enclosing the valuable paper already given (*anteà,* p. 283), contain several passages which may interest our readers:—

"I do not like the figure of *Semioptera wallacii*: the shoulder-plumes are not sufficiently erected; neither is the contrast of colour between the pure whiteness and the dark silky ash of the back sufficiently marked."

"The Dutch have just sent out a collector for the Leyden Museum to the Moluccas. He is now at Ternate, and goes to spend two years in Gilolo and Batchian, and then to N. Guinea. He will, of course (having four hunters constantly employed, and not being obliged to make his collecting pay expenses), do much more than I have been able to do; but I think I have got the cream of it all. His name is Bernstein; he has resided long in Java, as doctor at a Sanatorium, and tells me he has already sent large collections to Leyden, including the nests and eggs of more than a hundred species of birds! Are these yet arranged and exhibited? They must form a most interesting collection *.

"Many thanks for your list of Parrots †. My collections already furnish many corrections of the localities. Allow me here to make a remark on the constant changes of specific names by yourself and Mr. Gray. It strikes me that, by forcing the law of priority to its extreme limits, you create a complicated synonymy, instead of settling it. Was not that law made to decide among several names already in use—not to introduce diversity where uniformity of nomenclature has hitherto existed? What is gained by changing *Eclectus linnæi* into *E. cardinalis,* and *Paradisea superba* into *P. atra,* when it is almost certain that such changes will not be generally adopted? I believe the synonymy of Natural History will never be settled till a tribunal shall be appointed by general assent, from whose decrees there shall be no appeal. It matters absolutely nothing whether a bird has one name or another; but it is of the utmost importance that it should not have two or three at once. A synonymical catalogue, which should be authoritative and final by the general consent of naturalists in congress assembled, would be a work worthy of the century. Let ornithologists be the first in the field, and the other -ologists will soon follow."

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* These have been described at length in two articles in Cabanis' 'Journal für Ornithologie,' which we have already noticed ('Ibis,' 1860, pp. 94 & 299).

† See P. Z. S. 1860, p. 223.

"The Cockatoos puzzle me greatly. You make my Lombock sp. *C. æquatorialis,* which Temminck says is peculiar to N. Gilolo and N. Celebes. Do you make it a synonym of *C. sulphurea,* which you do not mention?* You will see small specimens of a Cockatoo from Mysol, which I thought were *C. æquatorialis.* I have just received a very small specimen from Gilolo, bearing the same relation to *C. cristata* that *C. sulphurea* does to *C. triton.* It will be, I suppose, quite new."

"The larger and smaller specimens of *Megapodius* from Mysol are also curious. In colour they are exactly alike; but the size of the bill and feet is so different that they must be distinct. Between the *Trichoglossus* of Amboyna and Ceram and that of the Papuan Islands I can discover no difference, and I suspect that *T. nigrigularis* of G. R. Gray must be suppressed. You have left out *Lorius domicella* altogether from your list, giving *L. tricolor* to Amboyna in its place, which latter is wholly Papuan. *Eos cyanostriata* is a native of Timor-laut; and of *Eos reticulata* and *squamata* I saw nothing in Amboyna and Ceram, and believe they do not exist there. *Aprosmictus amboinensis* is a species strictly confined to Ceram, which you have not given. It is quite distinct from the *A. dorsalis* of New Guinea. The *Psittacidæ* of the Solomon Islands seem so exactly representative of those of New Guinea and the Moluccas, as to show that they must be included in the Papuan subregion, and (if true *Lories* are not found in New Caledonia) will mark its eastern limits. New Ireland and the eastern parts of New Guinea no doubt still contain many fine things in this group."

The last letters received by Mr. S. Stevens from Mr. Wallace are dated Delli in Timor, February 6th, 1861, and state that he had been there a month, and intended waiting two more. The country was barren, and, Australia-like, poor in insects; but birds were tolerably abundant, though not of very fine species.

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* No. *C. sulphurea* is certainly separable, and it is probable that the Lombock bird belongs to this form; the Timor species being, according to Temminck, the true *C. sulphurea.*—P. L. S.

Mr. Gould informs us that the Night-Heron of the Falkland Islands, which we have hitherto termed *N. gardeni**, and concerning which Capt. Abbott has written an interesting note in our last Number, is not the same as the North-American bird, as we had imagined from Mr. Gould himself having called it *Nycticorax americanus* (see P. Z. S. 1859, p. 96), but belongs to the darker-coloured species found in the southern parts of South America, *Nycticorax obscurus*, Licht., Bp. Consp. ii. p. 141. With regard to the *Larus roseiventris* of the Falkland Islands (p. 166), we have endeavoured to solve the question of its specific validity by sending a specimen to the Berlin Museum, whence Dr. Cabanis has obligingly furnished us with the following note respecting the species:—

"*Larus roseiventris* of Gould cannot be confounded with *L. maculipennis* of Lichtenstein (*Mouette blanche*, Azar. ?), because *L. maculipennis* has the greater part of the wings black, only spotted with white.

"*Larus albipennis*, Licht., is identical with *L. glaucotes*, Meyen, the only difference being that Meyen's original example is rather smaller. I can find no specific distinction.

"*Larus roseiventris*, therefore, has only to be compared with *L. glaucotes*, Meyen. These two birds are very much alike, but may perhaps be considered separable, as forms belonging respectively to the eastern and western coasts. *L. roseiventris* differs in its somewhat smaller size, in its remarkably smaller and shorter bill, shorter feet, and its underside not being pure white, but tinged with rose-colour."

In part i. of the 'Journal für Ornithologie' for this year, G. von Rosenberg of Amboyna announces the discovery of a new species of Cassowary in the island of Salawattie, which he proposes to call *C. kaupi*. It has *no wattles*, and appears to be quite distinct from the several other species of this genus which have lately been described under the names *C. bennettii*, *C. uniappendiculatus*, and *C. bicarunculatus*.

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* See P. Z. S. 1860, p. 387, and 'Ibis,' 1861, p. 157.

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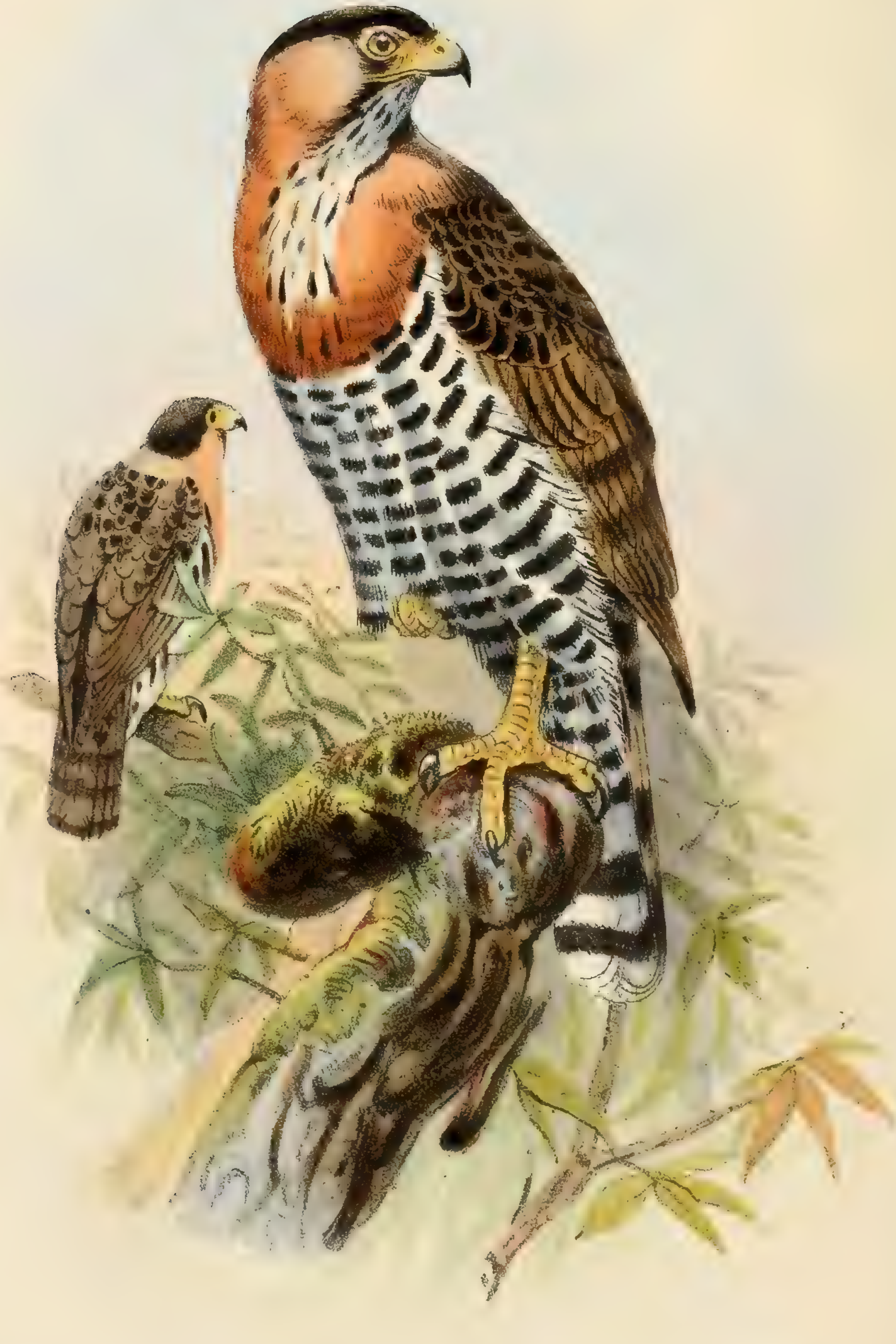

J. Wolf del.
J. Jennens lith.

M. & N. Hanhart Imp.

ACCIPITER PECTORALIS.

THE IBIS.

No. XII. OCTOBER 1861.

XXXIII.—*On a rare Species of Hawk, of the Genus* Accipiter, *from South America.* By P. L. Sclater.

(Plate X.)

The accompanying illustration is a reduction from an original water-colour drawing by Mr. Wolf, belonging to Mr. J. H. Gurney's portfolio, and represents a little-known species of Hawk, of the genus *Accipiter*, which I propose to call *Accipiter pectoralis*. This scarce bird has never been properly described, but has been alluded to by Prince Bonaparte, in an article entitled "Revue Générale de la Classe des Oiseaux," in the 'Revue et Magasin de Zoologie' for 1850 (p. 474 *et seq.*), in the following terms:—

"Mais la plus belle espèce d'Accipitrien est sans contredit celle que nous venons de retrouver dans le Musée d'Anvers, sous le nom de *F. pectoralis*, Cuv. (*Buteo pectoralis*? Vieill.). Quoique indiquée comme venant de l'Inde, elle vient du Brésil, et rappelle, par son plumage, le *Spizaëtus ornatus*. Sa taille est celle de mon *Astur cooperi*; le dessus de la tête et le dos sont noirs; la gorge blanche; le haut du cou et la poitrine d'un roux pur; le ventre blanc, barré de taches noires; la queue cendrée, traversée de quatre bandes noires."

Besides the example in the Museum of Antwerp thus spoken of by Prince Bonaparte, the only specimens of this Hawk which, as far as I know, exist in European collections, are in the Derby Museum at Liverpool. From one of them Mr. Wolf's figure was taken; and from the same bird, which has been kindly submitted to my examination by Mr. T. J. Moore, the Curator of this celebrated collection, I have drawn up the following short characters, which, when taken in conjunction with Mr. Wolf's figure, will, I hope, be sufficient to render the species recognizable without much difficulty.

ACCIPITER PECTORALIS.

Falco pectoralis, in Mus. Antverpiano.

Supra niger, dorsi et scapularium tectricumque plumis albo marginatis, pileo nigro immaculato: torque collari postico et capitis lateribus rufis: remigibus obscure fuscis: cauda nigra, albo quater fasciata: subtus albus, plaga rictali et striga mediali gutturis nigris; pectore rufo, albo variegato: ventre toto albo nigroque transfasciato: rostro nigro, pedibus flavicantibus: long. tota 17, alæ 10·2, tarsi 2·3, rostri a rictu 1·1 poll. Angl. et dec.

Hab. (ut dicitur) in America meridionali.

Mus. Antverp. et Derbiano.

The two examples of this bird in the Derby Museum (No. 393 and 393, *a*) were purchased by the late Lord Derby from Mr. Gould, in September 1841. They have no locality marked upon them. The species is very remarkable as being so nearly a miniature, as regards general appearance, of *Spizaëtus ornatus*, although certainly a true Accipitrine. The wings reach to about one-half of the length of the tail; the third, fourth, and fifth primaries are nearly equal and longest.

XXXIV.—*On Birds collected and observed in the Interior of British North America.* By Captain BLAKISTON, R.A. (Part I.)

BY the "Interior of British North America," I mean that portion of the continent lying to the north-west of Canada which may be said to be bounded by the western base of the Rocky Mountains, the 49th parallel of north latitude, Canada, Hudson's Bay, and the Arctic Sea, and which has hitherto usually gone by the somewhat indefinite appellation of the "Hudson's Bay Company's Territories" and the "Fur Countries."

Rather than give localities which require some amount of geographical knowledge to make out, I have referred to the great physical features of this region in the following manner :—" Hudson's Bay " means the coast of that bay ; " between Hudson's Bay and Lake Winipeg," the densely wooded region to the east of that lake ; " Saskatchewan Plains," the high prairie-plains between the north branch of that river and the international boundary ; " Lower Saskatchewan," the country bordering that river below its forks ; and " Red River Settlement," the settlement on the river of the same name which flows into the south end of Lake Winipeg.

The observations here do not extend beyond the western edge of the Rocky Mountains ; whence to the Pacific a distinct fauna and flora prevail, which cannot be included with the present. Most of the specimens I have collected are in the Royal Artillery Institution at Woolwich, where they can be inspected by any ornithologist. The nomenclature adopted is that given in Professor Baird's recent Report on the Birds of North America, unless the contrary is stated.

Order ACCIPITRES.

1. Falco anatum. ♀ No. 48. A female, from Saskatchewan Plains, on Bow River, near Rocky Mountains, August 6th, 1858.

Length 19 in., wing 14. Eye brown, feet yellow, bill blue horn-colour, cere yellow.

This species, although extending from Greenland to Cuba, has not yet been found on the Pacific slope of North America ; and Professor Baird, of the Smithsonian Institution, considers that the locality of my specimen (longitude 115° W.) is the most westerly yet ascribed to this bird. *F. nigriceps* takes its place on the Pacific, but may probably be found in the district of Mackenzie River in the far north, where the Rocky Mountains do not appear to offer so great an impediment to the mingling of the fauna and flora of the two sides of the continent as is the case to the southward.

2. Falco columbarius. ♂ No. 64. ♀ No. 65. North branch Saskatchewan River, April 6th, 1858. Male : length $11\frac{3}{8}$ in., wing $7\frac{7}{8}$, tail 5. Legs and feet yellow, claws black ; bill horn-colour, greenish towards the base.

Female: same date. Length $13\frac{1}{8}$ in., wing $8\frac{7}{8}$, tail $5\frac{3}{4}$. Legs and feet somewhat duller yellow than male, bill same colour as male, and cere greenish yellow. These two specimens had large intestinal worms, but were in very good condition.

No. 117 ♂. Forks of the Saskatchewan, May 25th, 1858. Length $11\frac{1}{2}$ in., wing $7\frac{3}{4}$, tail 5. Feet, cere, and space round the eye bright yellow, bill bluish horn-colour. Female shot at the same nest: length $12\frac{3}{4}$ in., wing $8\frac{1}{2}$, tail $5\frac{1}{2}$. Feet, cere, and space round the eye bright yellow. The nest of these birds was placed ten feet from the ground in a clump of willows and aspen, and contained four eggs.

The Pigeon Hawk appears to be as abundant and widely distributed in the northern as in the temperate regions of North America, where it is found to range from the Atlantic to the Pacific. Sir John Richardson mentions it as common on the coasts of Hudson's Bay, and I can bear testimony to the same fact in the interior.

It is curious that in both pairs of birds mentioned above, which I examined carefully, long intestinal worms were found.

In my collection are three eggs of this species, with the male bird belonging to the nest. M. Bourgeau, the indefatigable botanist of Captain Palliser's late exploring expedition, obtained a female specimen and eggs.

3. ASTUR ATRICAPILLUS. ♀ No. 89. Forks of Saskatchewan River, May 7th, 1858. Length 24 in., wing $13\frac{3}{4}$, tail 11. Bill blue horn-colour, feet light dull yellow, cere light greenish yellow, eye reddish orange. Shot off the nest, which contained four eggs.

No. 13 ♂ young. Saskatchewan River, October 14th, 1857. Length $22\frac{3}{4}$ in., wing 13. Eye bright yellow, feet and cere light dirty greenish yellow.

My specimens of the American Goshawk agree in measurements with the dimensions given by Professor Baird; but the total lengths given in 'Fauna Bor.-Am.' are considerably greater, which leads me to think that they are measurements of the preserved specimens. I take this opportunity of stating that all the measurements given by me, which can be influenced by the process of preparation, are from the specimens before skinning; and that the colours of the different parts which change after death, unless otherwise stated, have been taken at the time of the bird being killed. Moreover, the sex, if inserted, has been ascertained by dissection.

4. ACCIPITER COOPERII. ♀ No. 114. Forks of Saskatchewan River, May 21st, 1858. Length 19 in., wing 9½, tail 8½. Cere light yellowish green, feet yellow, bill blue horn-colour.

The first notice of Cooper's Hawk from the interior of British North America is here recorded; it was obtained by M. Bourgeau, and belonged to a nest in a balsam poplar, from which he procured two eggs of a bluish-white colour, which measured 1·8 to 1·9 in. by 1·4. The eyes were damaged by shot, but the irides appeared to have been orange. I have no other particulars of this species, which appears to be much commoner on the Atlantic coast of the United States.

5. ACCIPITER FUSCUS. ♀ No. 101. Forks of Saskatchewan River, May 15th, 1858. Length 13 in., wing 7¾. Eye orange, feet and cere yellow.

No. 165. Thirty miles south of Fort Edmonton, Sept. 27th, 1858. Length 14½ in., wing 8¼.

6. BUTEO SWAINSONI. ♂ No. 78. Forks of Saskatchewan River, May 5th, 1858. Length 21 in., wing 15¾, tail 8. Feet yellow, cere light yellow, bill bluish horn-colour.

Another male, Saskatchewan Plains, May 4th, 1858. Length 20 in., wing 15⅜. Eye chocolate-hazel, feet and cere light yellow, bill bluish black, colour of plumage same as No. 78.

Another male, forks of Saskatchewan River, May 18th, 1858. Length 19¾ in., wing 15½. The rusty bars on the belly and femorals rather more distinct; hardly so much white on the throat; bars on upper part of tail not so dark as No. 78.

Another male, forks of Saskatchewan River, May 25th, 1858. Length 19¾ in., wing 15, tail 8. Eye chocolate-brown, feet and cere yellow, bill dark-blue horn-colour, plumage same as No. 78.

No. 108 ♀. Forks of Saskatchewan River, May 18th, 1858. Length 21¼ in., wing 16½, tail 9. Stomach contained three toads.

This well-marked species is abundant in the neighbourhood of the Saskatchewan River; and out of a number shot I have preserved two fine, well-marked individuals. M. Bourgeau was also fortunate enough to procure eggs identified by specimens, which are white, more or less blotched with red.

The white throat in conjunction with the dark breast is so marked a feature that this might well be called Swainson's White-throated Buzzard.

7. Buteo borealis. ♂ No. 153. Kootsnay Pass, Rocky Mountains, August 21st, 1858. Male and female, killed on the 15th of May, 1858, at the forks of Saskatchewan: had red tails. This bird utters a peculiar squealing cry very frequently.

At the time of my ascending to a nest of this bird (of which, unfortunately, I have only one of the two eggs then taken remaining), my partner, although the birds made continual sweeps near me, failed in killing either. I have, however, very little hesitation in pronouncing the bird to be the Red-tailed Hawk, and the same as that of which I have the tail and feet, and of which I saw numbers at the Red River Settlement in the spring of 1859. The cry is very peculiar, and caused me to give the bird, for the time, when I had no books of reference, the name of the Squealing Buzzard.

8. Archibuteo lagopus. Although I saw numbers of this patchwork-looking bird, I never obtained a specimen.

9. Archibuteo sancti-johannis. Head, feet, and wings preserved, and three eggs obtained by M. Bourgeau: wing 18 in. long. Saskatchewan Plains, summer of 1858. The eggs are white, with slight blotches of red: rather more spherical than those of *A. ferrugineus*.

10. Archibuteo ferrugineus. ♀ No. 86. Between north and south branches of Saskatchewan River, April 30th, 1858. Length 26½ in., wing 18⅛, tail 9½. Eye brown-hazel, feet and cere yellow, bill dark horn-colour. Remains of Ground-Squirrel in stomach.

The eggs taken from the nest of No. 86 were four in number. The nest, which was placed in an aspen tree, 20 feet from the ground, was composed of sticks, 2½ feet across, and lined with buffalo wool. Those taken from another nest near the same locality were five in number. This nest was situated in a tree only 10 feet above a lake.

A specimen and two eggs by M. Bourgeau, Saskatchewan Plains, July 9th, 1858. Skin 25 in. long, wing 17. This is the first instance of the eggs of this bird having been collected; they are of a white colour, plain, or blotched more or less with reddish brown.

This bird feeds on the Ground-Squirrels so common on the prairies; hence, I suppose, its name of "Californian Squirrel-Hawk."

It is a fine powerful bird, and, in distinction from other hawks, is known to the Cree Indians by the name of Sa-qua-ta-mov, of which word I can find no interpretation; but they have shown their knowledge by classing the Black Hawk, last mentioned, along with this one, and calling it the black Sa-qua-ta-mov.

The way in which birds adapt their habits to circumstances is strikingly shown on the prairie, where hawks and ravens will build even on low bushes; and, again, along rivers where wolves are numerous, Canada Geese sometimes lay their eggs in the old nests of eagles.

11. CIRCUS HUDSONIUS. Nos. 76, 92, 161. Saskatchewan Plains to Rocky Mountains, 1858.

This bird is abundant throughout the interior; the individuals vary much in the colour and markings of their plumage. From the fact, I suppose, of its feeding on snakes, it is known among the Crees as the "Snake-hunter." I have, however, never found anything but the remains of mice in the stomachs of many of these birds which I have opened.

In 1858 I observed it as early as April 1st near the forks of the Saskatchewan; while the spring following I did not observe it before the 28th of that month at Red River Settlement. The progress of the seasons of these two years was, however, very different.

12. AQUILA CANADENSIS. On Saskatchewan River till November 18th, 1858. Tail-feathers highly prized by the Indians.

13. HALIAËTUS LEUCOCEPHALUS. Head, wing, and feet of an example obtained by M. Bourgeau, Saskatchewan Plains,

summer, 1858. Wing 23 in. long. Common on Saskatchewan River, and thence to Hudson's Bay. It is sometimes seen in February, and remains until the rivers close in November. I was not fortunate enough to procure a specimen of either of these Eagles.

As has been observed by Sir John Richardson, the Indians divide the year into moons, each of which is named after some natural occurrence. Among them are the Eagle and Goose Moons, at the times of the year when these birds first make their appearance after the winter. Now, although this lunar reckoning may be very well for intervals of time, it is far from satisfactory in fixing certain periods of the year; for as the number of days in a year is not divisible by the number of days in a lunar month, so each year the same moon is about eleven days earlier, and in three years would take the place of the former one.

14. Pandion carolinensis. I regret that I cannot give a single instance of the occurrence of the Fish-Hawk in the interior of British North America. It is, however, by no means an uncommon bird, and was observed by myself from Hudson's Bay to the western base of the Rocky Mountains. It is rather early in going south in the fall of the year.

15. Bubo virginianus. ♀ No. 38. Forks of the Saskatchewan, January 29th, 1858. Length 23 in., wing 15. Eye bright yellow.

16. Bubo arcticus. ♂ No. 52. Forks of the Saskatchewan, March 25th, 1858. Length 22½ in., wing 4¼, tail 9¼, 2nd, 3rd, and 4th quill-feathers nearly equal and longest. Eye very bright amber-yellow. Agrees with *B. arcticus* of the 'Fauna Bor.-Am.'

17. Nyctea nivea. No. 186. Hudson's Bay, common throughout the north; follows the Willow Grouse south in winter.

18. Surnia ulula. No. 21. Forks of the Saskatchewan, November 7th, 1857.

No. 39 ♂. Same locality, January 29th, 1858.

[To be continued.]

XXXV.—*On a New Bird from Western Africa.*

By Dr. G. Hartlaub*, F.M.Z.S.

(Plate XI.)

Equatorial Gaboon must undoubtedly be reckoned among those districts of Africa which are most rich in ornithology. Du Chaillu, Franquet, Aubry-Lecomte, Fosse, Gujon, and others have collected species, up to the number of 400, in this somewhat confined locality. *Parinia, Phodidornis, Archimerops, Parmoptila, Alethe, Erythrocercus, Megabias, Artomyias, Verreauxia, Hetærodes, Phasidus,* are among the most remarkable forms of the African Avifauna, and have as yet been only met with in Gaboon. But still more remarkable than all these, and in our eyes, indeed, to be placed among the most interesting ornithological discoveries of the present time, is a new genus of bird of the order *Fissirostres* from this country, which, thanks to the friendly zeal of Jules Verreaux, has lately come into our hands, and which we wish to introduce into the system under the name *Pseudochelidon.*

It is evident, at the first glance, that this form must be placed as a connecting link between the families of *Hirundinidæ* and *Coraciidæ,* which have been so truly and rightly placed near one another by George Robert Gray†. A distinguished observer, to whom we showed the bird without allowing him to see the bill and feet, pronounced it at once to be a Swallow; and, in fact, the size, colour, formation of the tail and wings (particularly of the latter) seem thoroughly Swallow-like; while the red bill and feet also, though in rather a less degree, remind one strongly of *Eurystomus.*

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* Translated from part i. of the 'Journal für Ornithologie' for the present year (p. 11).

† We cannot agree with Mr. Gray and Dr. Hartlaub in considering the *Coraciidæ* and *Hirundinidæ* to be at all nearly allied. The Swallows, though often confounded with the Swifts (*Cypselidæ*), have, as has been repeatedly shown by those who have studied their anatomical and pterylographical structure, nothing to do with the true *Fissirostres,* but form a merely modified group of typical *Oscines. Pseudochelidon,* having, as Dr. Hartlaub has kindly informed us, *ten* primaries, should, in our opinion, have been compared with *Cypselus*; and with all deference to Dr. Hartlaub's great authority, we venture to suggest that it will eventually be recognized as an aberrant form of the *Cypselidæ,* perhaps leading off towards *Eurystomus.*—Ed.

Genus Pseudochelidon.

Rostrum eurystominum, sed apicem versus conspicue attenuato-subcompressum, culmine minus rotundato, inter nares apertas subcarinato; naribus in fossa subtriangulari positis, subrotundatis, conspicuis.

Pedes majusculi; tarsi breves, digito interno et externo æqualibus; unguibus debilibus valde compressis, postico robustiore, majore.

Alæ cypselinæ, longæ, angustæ, subfalcatæ, caudæ apicem longe superantes.

Cauda brevis, æqualis, rectricibus apice subquadrato-dilatatis, in apicem tenuem desinentibus, sive submucronatis; scapis mollibus; supra- et infra-caudalibus longis, cypselinis.

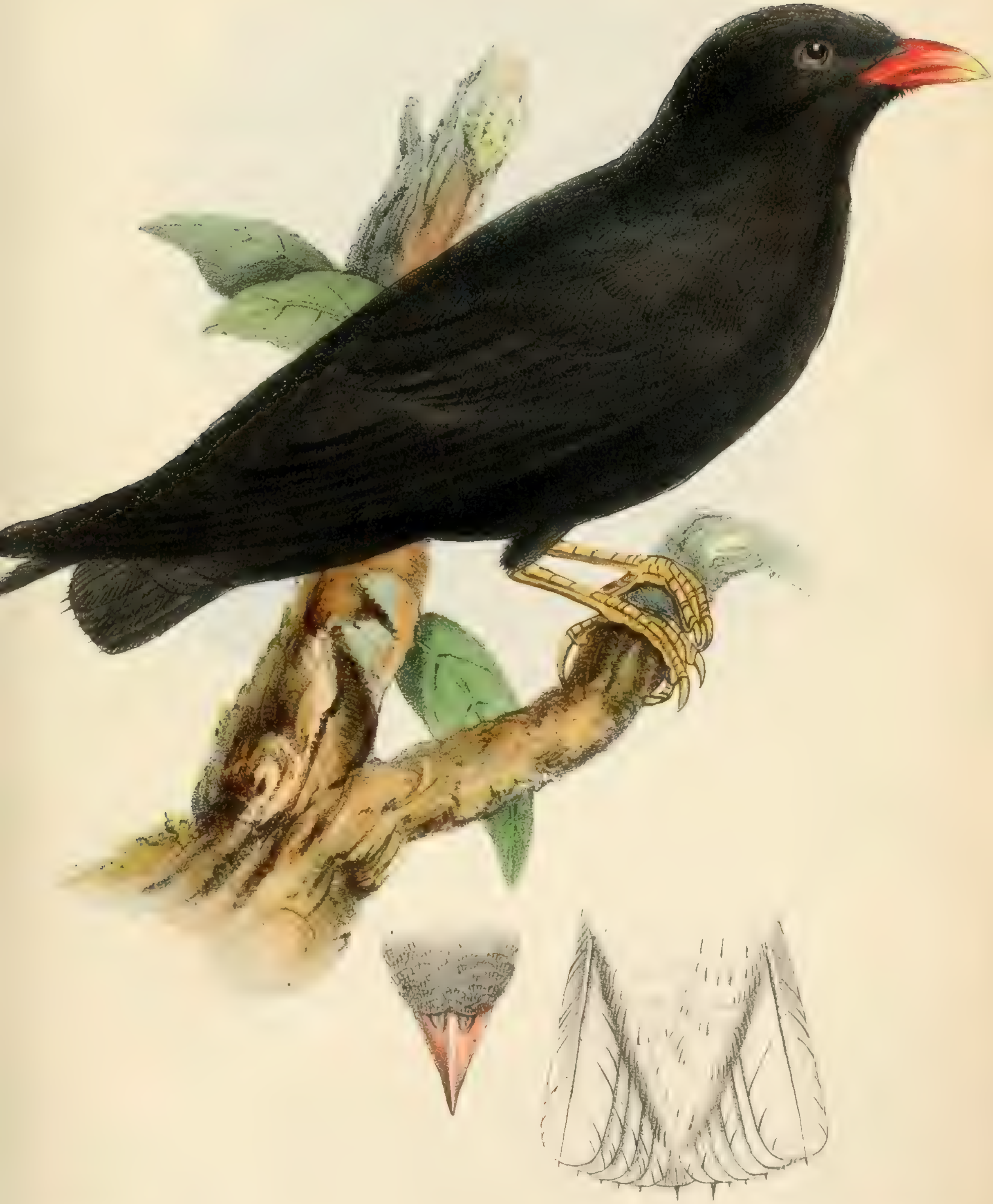
Ptilosis sericea, metallice nitida.

Pseudochelidon eurystomina, *nob.*

Tota nigra, nitore nonnullo metallico; dorso conspicue æneo-virescente, cauda et alis vix virescentibus; subalaribus fuliginosis; pedibus flavo-rubentibus; rostro corallino-rubro, apice pallidiore, flavo; unguibus pallidis.

Long. tota 5″ 3‴; alæ 4″ 4‴; caudæ 1″ 7‴; rostri a fronte 5‴, a rictu 7‴; latit. rostri ad bas. 5‴; altit. rostri ad bas. $2\frac{1}{2}$‴; long. tarsi $5\frac{1}{3}$‴; dig. med. c. ung. 8‴; long. dig. ext. et int. c. ung. 6‴, poll. et lin. Gall.

The deep, half velvet-like, half dull metallic-like, glimmering green of the back seems rather sharply defined against the pure black of the head, and reminds one of the somewhat peculiar colouring of *Hirundo thalassina.* The under side is more of a dull black. The formation of the tail is abnormal, and worthy of remark. The soft shafts of the rectrices project, though not naked, beyond the barbed portions; these latter being rather pointed towards them. This formation is carried to the furthest extent in the two middle feathers, but is apparent in all of them. The upper and under tail-coverts project in a wedge-like shape to nearly the end of the tail—a formation almost constant among the *Hirundinidæ,* but which, on the other hand, is not found in *Eurystomus,* where the tail-coverts only just cover the base of the tail. The formation of the feet differs from that of *Eurystomus,* inasmuch as it is generally weaker, and the inner



Jury, lith.

M & N Hanhart, imp.

[illegible] TYPHINA.

and outer toes are of the same length (in *Eurystomus* the inner toe is considerably shorter); also the claw of the short hinder toe seems considerably longer than in *Eurystomus.* The nostrils, which in *Eurystomus* are covered, are bare in *Pseudochelidon*; and the very peculiar compression of the short broad beak towards the tip is not found in the former genus.

The only example of this small, but, in spite of its appearance, very interesting bird is among the treasures of the Bremen collection.

XXXVI.—*Notes on Ornithology taken between Takoo and Peking, in the neighbourhood of the Peiho River, Province of Chelee, North China, from August to December,* 1860. By Robert Swinhoe, Corr. Memb. Zool. Soc. Lond., Member of I. R. Zool. & Botan. Soc. of Vienna, C. M. of the R. As. Soc. of Bengal, &c.

From Takoo to Tangkoo, a distance of some five miles, nothing but open flats of mud present themselves to the eye, relieved by ditches some 10 or 20 feet wide, which communicate with the sea, supplying the salt-pans with sea-water, and were used during the war as impediments to the passage to and from the forts. Pools of water also frequently abound, sprinkled here and there with rushes. About Tangkoo, on both sides of the river, the ground grows more firm and becomes covered with coarse grass and low vegetation, though abounding in marshes. Numerous grave-hillocks speckle the face of the flat plain, and, magnified by the mirage, assume the aspect, at a distance, of small villages or houses grouped together. These localities afford ample shelter to the small Chinese Hare (*Lepus sinensis*), and are frequented by numerous species of birds. On leaving Tangkoo on the passage up the river, both banks are lined with flourishing gardens and orchards, abounding in great plenty in all the fruits and vegetables of the north, though further inland the country still retains its marshy appearance, undrained and uncultivated; and it is not until you reach Hunshuy-koo, some twenty-five miles up on the south bank, that cultivation springs into existence, and large fields of coarse millet (*Sorghum*) and maize wave their lofty stalks over your head and destroy your view. Villages begin to increase in number, though without many trees. Cultivation increases as you advance to the walls of Tientsin, where a large open grassy plain to the east arrests your attention. I was the only interpreter with Sir Robert Napier, General of the 2nd Division, on the march to Tientsin; and as the divisional duties were so heavy, I had not much time to shoot, or to bestow on natural history. But fortunately, on the march to Peking, I was attached to the topographic department under Colonel Wolsely, and my duties being principally confined to making inquiries of, and getting information from, the natives, I had plenty of opportunities, in our numerous halts, of paying some little attention to my favourite study. The Grand Canal, the Ta-se and Seaou-se Rivers, with the main branch of the Peiho winding N.W., together with their numerous creeks and tributaries, all offer excellent feeding-ground to numberless water-birds. The country consists of one vast alluvial plain of mixed sand and mud, gradually and almost imperceptibly ascending towards Peking. In the neighbourhood of Ho-se-woo, on the banks of the Peiho, a few sandy undulations break somewhat the flatness of the country. After leaving Tientsin the numbers of trees about the villages begin to increase, and as you approach Peking, topes of lofty timber overshadowing the *tumuli* of departed greatness give in many places quite a sylvan aspect to the scene. As we marched up in September the chief crops of sorghum, maize, cotton, three descriptions of small millet, pumpkins, beans, &c. were all ready for the harvest, and in some spots the reapers had already been busy. On our return in November the country presented a very barren face. All that was left of the waving maize and millet was merely the dry and hardened pegs, some foot and a half high, which covered acres of ground, and made digression from the road very unpleasant for the horses' legs. We were delayed some time on the banks of the Yunleang Canal, some seven miles from Peking, waiting for reinforcements. This canal is the chief water-communication between Tungchow, on the banks of a branch of the Peiho, and Peking. It runs close to the Peiho, but not into it; thence westerly under the Pa-le (8 le) or stone bridge to the first weir, where the further portion of the canal is dammed and lies some 10 feet above. There is a small custom- or toll-house here for the purpose of levying duties on goods reshipped from the lower on to the upper portion of the canal. The canal was reported to run through and round Peking; but it was found to do nothing of the kind, it being again dammed on its approach to that city. The banks of this almost stagnant piece of water are densely clothed here and there with rushes and high grass, which afford skulking-places to many a freshwater-frequenting bird.

On the north of Peking there is a large open space of ground beyond the Russian cemetery, called the parade ground, where the Chinese troops were said to exercise. Beyond this, again, stood several Lama temples abounding in lofty trees, the haunts of many of the Crow-tribe: and the Imperial grounds inside of Peking, with their gardens densely planted with trees, were further favourite resorts. We cannot allude to the parks of the Summer Palace, with their lakes and fine groves of timber, without making the soul of the naturalist long for a year's ramble at least in these lovely bird-frequented spots. But the follower of an army suffers under great disadvantages. He is at all times interdicted from shooting within the precincts of the camp, and as soldiers always choose sylvan spots for their encampment, if the camp be a large one, he finds every grove monopolized by the army, and unless he travels miles away in a dangerous country, has little prospect of procuring much. With such a treacherous race as the Chinese one never knew when it was peace, and so the constant sounds of guns miles from the camp were not at all unlikely to alarm the outposts. M. Zill, an amateur naturalist in the French camp, found the same difficulties there, and being dressed in private costume he was held in greater restraint by the French soldiery than one in uniform would have been. On our return march the cold presented many obstacles. I merely make the above remarks in case any one looking over the following list might object to my want of activity, forgetting the difficulties I had to contend with. I procured the skins of some fine Deer in the Summer Palace Park, which, together with a few other mammals and a few reptiles, have been forwarded to the Zoological Society of London for determination. The plants I collected I have presented to Dr. H. T. Hance, H.M. Vice-Consul at Whampoa, well known for his diligent researches in Chinese botany; and the insects to J. C. Bowring, Esq., the best entomologist, perhaps, this side of the Cape.

On our return to Tientsin we found the market well-stocked with wild fowl and other game at cheap rates; but it was difficult to make the natives understand that I wanted the birds for their skins merely, and preferred clean and perfect specimens to those partly plucked in order to show their plumpness.

I am sending the skins procured from the above-mentioned localities as well as those from Talienwan for the inspection of the Editor of 'The Ibis,' that he may correct or add to my remarks in any way he chooses*.

1. BRAHMINY KITE. *Milvus govinda,* Sykes.

A somewhat larger and stronger species than the southern bird, and much larger than the Indian form.

2. JAPANESE BUZZARD. *Buteo japonicus,* Schlegel.

3. EAGLE BUZZARD. *Buteo* —— ?

The female of this bird was procured at Tientsin in November. It was hooded and carried about on the fist of a Chinaman, who said he was training it for hunting hares. I saw another, a good deal resembling it, with a blue back, which I took for the male. A Chinese had it on his arm; but as we were on the march from Tientsin to Takoo, I was not able to purchase it. I never noticed it in a wild state. Cere yellow, legs pale yellow tinged with blue, claws black.

4. HEN HARRIER. *Circus cyaneus* (Linn.).

Common about the marshes near Takoo in August.

5. PIED HARRIER. *Circus* —— ?

This is the species numbered 12 in my notes in 'Ibis' for 1860, p. 359. I have not yet succeeded in identifying the species, but I think it may be *Circus hudsonius* of America. I noticed it occasionally about the Takoo marshes at the same period as the foregoing.

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* These skins have not yet reached us; but we are unwilling to detain Mr. Swinhoe's paper any longer, and will therefore give any observations we may have to make on them in a subsequent Number.—ED.

6. Kestrel. *Falco tinnunculus*, L.

Not common.

7. Merlin. *Falco æsalon*, L.

I was watching a small Hawk being chased by a Magpie. The Hawk was in great distress and screamed piteously as it flew round and round the woody graveyard in which I was standing, to try and elude its persecutor. Presently I heard the report of a gun outside, and running out found Colonel Dupont and M. Zill with the body of a female of this species expiring in their hands.

8. Red-legged Falcon. *Falco vespertinus*, L.

Occasionally seen. M. Zill assured me he had seen and shot it at Chefoo, the northernmost promontory of Shantung, where the French rendezvoused.

9. Sparrow-Hawk. *Accipiter nisus*?

I suppose this is the same as the South-Chinese species; but the female I procured has rust-tinted axillæ as in the European bird, whereas those parts in the Amoy bird are white. I must say I took an unfair advantage of the individual of which I send the skin. It was very nearly dark one evening when I was standing in a pine plantation looking out for Blue Pies. I felt, rather than saw, something dark by me. It charged into a tree, and settled on a bough. I put up my gun and fired at guess, and to my delight picked up a bonny Sparrow-Hawk. This took place in November on our return march, the thermometer standing below freezing-point.

9 *a*. Eagle-Owl. *Bubo maximus*.

10. Tawny Owl. *Otus brachyotus*, L.?

When the army was advancing on the north wall of Peking, an owl was put up from its skulking-place in a field of dried maize-stalk. It flew round and round and again settled. It appeared to me to belong to this species.

11. Goat-sucker. *Caprimulgus jotaka*, Schlegel.

A male was caught alive in August soon after our landing at Pehtang. This species I take to be the true *C. jotaka* of the 'Fauna Japonica.' It seems to differ somewhat from our Amoy species.

We did not see any more of them; they had probably migrated, or this might have been a single individual blown ashore from its usual course of migration. We certainly did not observe the bird at Talienwan.

12. FILLETED SWIFT. *Cypselus vittatus,* Jardine.

Not uncommon on our first arrival.

13. SWALLOW. *Hirundo rustica,* L.

A common summer resident.

14. TIGER-SWALLOW. *Hirundo daürica,* Pallas.

Flocks frequently seen in August and September.

15. SAND-MARTIN. *Cotyle riparia*?

I send two specimens of this pretty little Swallow. It was very common about the marshes at Takoo, often perching on the ground, apparently to take rest and preen itself. In the plain before Tientsin thousands of this species, in company with large parties of the two foregoing, swarmed the air during the warm days of September, engaged in catching the numerous flies that haunted the camp. We were delighted to see these active little fly-destroyers engaged so busily in the work of destruction, as we were literally inflicted with a plague of flies; every tent was blackened towards the top with these small pests.

In the flights of Swallows met up the river near Amoy, I observed a smaller and lighter species, which I conjectured at the time might be Sand Swallows; but as I was unable to procure specimens, I let the matter pass. I cannot help thinking now that they were of this species.

16. KINGFISHER. *Alcedo bengalensis,* Latham.

Sometimes seen, but not common.

17. HOOPOE. *Upupa epops,* L.

18. WARBLER. *Lusciniopsis canturians,* mihi.

This, or the closely allied species *L. cantans* of Schlegel, occurred in August, but I did not procure specimens.

19. GRASSHOPPER-LARK. *Locustella* —— ?

Closely allied to *L. rubescens,* Blyth, but differs in many respects from a specimen of that bird kindly sent me by Mr.

Blyth. I observed this bird in August, but was not able to procure specimens. I therefore enclose my only specimen from Amoy, that Mr. Sclater may inspect it, and, if he considers it new, describe it.

20. FANTAIL WARBLER. *Cisticola cursitans.*

Not common. Probably resident; one shot in October on the banks of the Yun-leang Canal.

21. SPOTWING REDSTART. *Ruticilla aurorea,* Pallas.

A few observed. Leaves early.

22. BLUE-THROATED WARBLER. *Cyanecula suecica* (Linn.).

One caged specimen observed at Tientsin.

23. RED-THROATED WARBLER. *Calliope camtschatkensis* (Gm.).

This is a common bird in the neighbourhood of Peking, and, I think, is a permanent resident. I observed it as late as October skulking about amongst the long grass, like a Reed-Warbler, whence it was very difficult to drive it. Perched on a tree, it assumes many of the habits of the Redbreast, throwing the tail up and bobbing forward. It is a great favourite among the Chinese, who call it the Hung-po (Red-throat), and sometimes Chin-po (Golden-throat). The female has the red decoration on the throat like the male, but this is not the case in the young birds. I send three males and one female; two of the males were taken from a Tartar camp. They were attached, by strings tied round the neck, to a long twig, on which they amused themselves by hopping up and down. This is a common way of confining birds in the north.

24. BLUE-TAIL. *Ianthia rufilata,* Hodgson.

A summer resident only.

25. REED-BIRD. *Acrocephalus magnirostris,* mihi.

I saw this bird frequently in August about the reeds on the banks of the Peiho. It migrated soon afterwards.

26. STONE-CHAT. *Pratincola indica,* Blyth.

The separation of this bird from the European *P. rubicola* is usually very arbitrary. It appears, in my opinion, to be only a variety. I saw a few in September near Ho-see-woo, and secured a female, which I send.

27. RIBBON-TAILED FLYCATCHER. *Tchitrea principalis* (Temminck).

I observed one in the garden round Sankolinsin's head-quarters at Takoo in the month of August. It was a female, and from its superior size I should take it to be the Japanese species rather than the Southern-Chinese bird, if these are different.

28. BROAD-BILLED FLYCATCHER. *Hemichelidon latirostris* (Raffles).

Common in August.

29. GREY-SPOTTED FLYCATCHER. *Hemichelidon griseisticta*, n. sp. Wrongly referred to *H. fuliginosa*, 'Ibis,' 1860, p. 57.

This bird, which has occasionally been procured at Amoy, I met with in August in a garden near Takoo. I send the Editor an Amoy specimen for comparison. The species is closely allied to the last, but is larger, and is marked with oblong grey spots on the breast and flanks. Mr. Blyth has pronounced it new.

30. PIED-TAIL FLYCATCHER. *Erythrosterna mugimaki* (Temm. & Schl.).

Very common in August and September about orchards. Throws up and expands the tail, uttering a Robin-like running note.

31. DALMATIAN GOLD-CREST. *Reguloïdes proregulus* (Pallas).

Very common among the trees near Tungchow in September.

32. YELLOW-RUMPED GOLD-CREST. *Reguloïdes chloronotus*, Hodgson.

Common in the same spot and at the same date as the foregoing.

33. BROWN WREN. *Phylloscopus fuscatus*, Hodgson.

Common in September. Col. Dupont shot specimens of this and the two last while *à la chasse* with M. Zill and myself.

34. CROWNED WREN. *Phylloscopus coronatus* (Temm. & Schl.)?

I frequently saw a species of Yellow Wren in the low scrub near Tangkoo in August, which I took to be this species. As, however, I did not procure specimens, I mark the name with a query.

35. LEADEN-LEGGED WREN. *Phylloscopus plumbeitarsus*, n. sp.

I shot but one of this pretty species, and took it at first for

P. sylvicultrix, mihi, so common at certain seasons at Amoy; but on handling it, I at once observed the 1st primary, quite small in *P. sylvicultrix*, to be much larger in this species. The *tarsus* was furthermore, strange to say, of a *leaden* colour, as in the *Paridæ*, though the feet were quite *phylloscopine*. I extract my notes taken while the bird was fresh.

♂. Length $4\frac{2}{10}$ in.; wing $2\frac{3}{10}$, 1st primary $6\frac{\frac{1}{2}}{10}$; tail $1\frac{8}{10}$; tarsus $\frac{6}{10}$. Bill: upper mandible brown, lower mandible and rictus clear ochre. Legs leaden grey, bases of toes and claws pale yellowish. This species resembles much *P. sylvicultrix*, but is distinguishable at once by its large 1st primary, the grey legs, and the ochreous under-mandible. In this last peculiarity it resembles *P. coronatus*; but is a smaller species, and is totally destitute of the pale yellowish stripe, flanked by a brown one on each side, that crowns the head of the Japanese bird.

36. RED-FLANKED WHITE-EYE. *Zosterops japonicus*, Temm. & Schl.

I saw this bird only once, and that in a cage at Tientsin, and was surprised to find how completely it differed from the Southern-Chinese species, to which I had before ascribed the same name. Schlegel was quite right in the 'Fauna Japonica' in stating that this species has no 1st primary, and that the feathers of the flanks are of a ruddy rust-colour, though in the colour of the legs and beak he was misinformed. These, as in the southern species, are leaden-coloured. The coloured plate, which his son at Amoy has, misled me; as the colours, somewhat carelessly put on, do not show in half-brilliant-enough tints the red patch on each side that marks the species. It will not do to call the other bird *Z. sinensis*, as it is only a Southern-Chinese form, being generally resident in the places where it is found. Let it stand, then, as *Z. simplex*.

37. MARSH TIT. *Parus palustris*, L.

It is surely remarkable that this European species should be the only common bird of the genus in the Peiho Plain. I have four skins, and I can discover no specific distinction; perhaps Mr. Sclater may be more successful. Wherever trees abounded, the chirp of this species was sure to be heard. They were rather knowing, and would seldom allow you to come under the tree in which they were sporting.

38. Lesser Ox-eye. *Parus minor,* Temm. & Schl.

I never met with this species wild here, and only once saw one in a cage. M. Zill assured me it was by no means rare at Chefoo. Perhaps the bird is migratory in these parts, and had departed southwards before our arrival. I do not think there is sufficient difference between this and *Parus cinereus* to sanction a specific separation. I have shot very grey-backed birds at Amoy; and in Hongkong the specimens procured are certainly identical with a skin of *P. cinereus* lately received from Mr. Blyth.

39. Pale Redwing. *Turdus pallidus,* Gmelin.

A few of these birds were about in September.

40. Red-tailed Fieldfare. *Turdus* —— ?

This Thrush resembles somewhat *T. naumanni*; but a difference is at once seen in the brownish-red side-feathers of the tail, which are conspicuously displayed when the bird flies. A few arrived about Peking in October, and frequented the leafless groves, where they would perch on the topmost boughs of the twigs three or four at a time. The note was a kind of chuckling chirp, and differed much from the ordinary sibilant "*sit*" uttered by all the other species found in China. The affinities of this Thrush are certainly with the Fieldfare.

I may here state I have *T. naumanni* from Amoy, shot here on several occasions, and identified by Mr. Blyth. A Thrush-like *Geocincla* has also been procured at Amoy on two occasions. This Mr. Blyth declares to be his *Turdus dissimilis,* once procured in Calcutta. But one of this last species, shot at Hongkong, and included among my birds from Hongkong, Macao, and Canton, forwarded to Mr. Sclater in June last, has been identified by him as the young of *Turdus cardis.* (See *antea,* p. 37.)

41. Monticola —— ?

The specimen I enclose was the only one I ever saw of this interesting bird. I met with it on the 26th of September in a grove of pines. It was very lively, hopping about from branch to branch with its eye fixed upon me. It occasionally bobbed its body and moved its tail with a depressed jerk, much in the manner of *Petrocossyphus manillensis.* I think this is a new species, and, it strikes me, a very interesting one, as being somewhat abundant.

42. Golden Thrush. *Oreocincla whitei* (Eyton).

The feathers of this species were picked up in a tomb-grove in September; the body had probably been devoured by a Hawk.

43. Pied Wagtail. *Motacilla lugubris,* Pallas.

Frequent in September.

44. Grey Wagtail. *Motacilla boarula,* L.

In September.

45. Yellow Quaketail. *Budytes flava* (L.).

Also in September.

46. Wood Wagtail. *Nemoricola indica* ?

I watched this or a cognate species for some time closely in an orchard in August. It looked very similar to the Indian skins, but unfortunately I was not able to get a specimen.

47. Richard's Pipit. *Anthus richardi,* Steph.

48. Tree Pipit. *Anthus agilis,* Sykes.

Common in September; not seen after.

49. Japanese Pipit. *Anthus japonicus,* Temm. & Schl.

I think resident.

50. Short-toed Lark. *Alauda brachydactyla,* L.

Observed this bird in a cage.

51. Japanese Lark. *Alauda japonica,* Temm. & Schl.

I think identical with the bird in the 'Fauna Japonica.' I send home two specimens. It was very common in the cultivated fields, roosting at night in the coarse grass and water plants that line the banks of the Peiho. Numbers of them were offered for sale in the Tientsin market all ready plucked and trussed.

51 *a.* Mongolian Lark. *Melanocorypha mongolica* (Pall.).

I never saw this bird wild; but, judging from the numbers brought to Tientsin for sale in November and December, I should say it must be common in the neighbourhood.

52. SMALL BUNTING. *Emberiza pusilla,* Pallas.

Found in small flocks on the banks of canals and edges of water-pools. M. Zill had two specimens of this bird alive in a cage, which were more or less marked with white.

53. PAINTED BUNTING. *Emberiza fucata,* Pallas.

54. GOLDEN BUNTING. *Emberiza aureola,* Pallas.

Common about the reedy herbage of the Yun-leang Canal.

55. SULPHURED BUNTING. *Emberiza sulphurata,*Temm.&Schl.

Mr. Blyth assigns this to P. Bonaparte's genus *Citrinella,* but it is evidently the bird of the 'Fauna Japonica.' I send an Amoy specimen. I have also seen it at Hongkong.

56. MASKED BUNTING. *Emberiza personata,* Pallas.

Seen in August, but not afterwards.

57. FROSTED BUNTING. *Emberiza canescens,* mihi.

I send an Amoy specimen of the male.

58. RED AND YELLOW BUNTING. *Emberiza rutila,* Pallas.

A fine specimen used to come down into my courtyard to feed at Peking. I loaded my gun with the smallest possible quantity of powder, and shot in order not to make a noise, and so missed him. This was the only one I saw of this handsome species.

59. RUDDY HAMMER. *Emberiza* —— ?

The only specimen I saw and procured of this interesting Bunting, I enclose. It appears to me closely allied to *E. citrinella,* L., and will very likely have been described by Pallas in his 'Zoogr. Rosso-Asiat.,' a copy of which work I have not at hand.

60. LAPLAND LARK-BUNTING. *Plectrophanes lapponicus.*

My first acquaintance with this bird was on the 12th of November. It was a bitterly cold morning, the thermometer much below freezing-point, when I started at sunrise to explore the neighbouring country, and to return at eight before the camp broke up. We were within a day's march from Tientsin. My fingers were quite numbed, so that I could scarcely use them to pull the trigger, when I suddenly put up a brown lark-like bird from a tuft of dried cotton-plant. It flew a little way and then dropped again. I then observed that it had a peculiarly short beak, though it walked like a lark. My first shot missed it; yet the foolish bird only flew a little distance and settled again, looking at me while I reloaded. I then shot it, and imagine my delight when I picked up what appeared to me to be a new species of Lark-Bunting. It was a female. I beat the ground over and over again, refusing several shots at hares that started from almost under my feet, knowing that the birds of this genus are seldom found alone, but could flush no other. I was obliged to give up the chase, and returned to my tent, only just in time to pack up and march. When arrived at Tientsin I found thousands of this bird on sale, plucked and trussed like larks. I begged the market-men to bring some with feathers on, and one morning, to my surprise, found a basketful of very fair specimens. I at once bought two dozen, and set to work skinning them. They measured on an average $6\frac{1}{2}$ in., wing $3\frac{7}{10}$, tail $2\frac{8}{10}$. The natives called them *Teay-cheo* (Iron Bird), and explained to me that they were caught by the hand in springes baited with the small maggots found in decaying millet-stalks. My specimens correspond very nearly with the description of the Lapland Lark-Bunting found in Europe in 'M'Gillivray's British Birds,' though I should think it could hardly be the same species, as its existence is not noted, to my knowledge, in Siberia*.

61. RED-POLL. *Cannabina linaria* (Linn.).

Seen in cages.

62. MEALY RED-POLL. *Cannabina canescens* (Gould).

A pair were found in a cage at Pehtang, where the troops landed.

63. SISKIN. *Fringilla spinus*, L.

This species was frequently seen in cages. I have received it before from Foochow, in Fuh-keen Province.

64. CHINESE GREENFINCH. *Fringilla sinica*, L.

Common both wild and in cages.

65. MOUNTAIN SPARROW. *Fringilla montana*, L.

Common. Takes the place of the domestic Sparrow.

66. MOUNTAIN FINCH. *Fringilla montifringilla*, L.

Often offered for sale at Peking. I send a female procured there.

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* It is included in v. Schrenck's work on the Birds of Amoorland (vol. i. p. 276).—ED.

67. Hawfinch. *Coccothraustes vulgaris*, Selby.
In cages.

68. Crossbill. *Loxia curvirostra*, L.
In cages.

69. Chinese Magpie. *Pica sericea*, Gould.
Very common: associating in the winter in large flocks.

70. Blue Magpie. *Cyanopica cyanea* (Pall.).
This shy and noisy bird occurred in large flocks among the thick groves of the pine. Imagine yourself in a dark grove of such trees, walled all round. Several large tomb-mounds stand at the other end, side by side. They can contain nought but the dust of the departed; for these trees were planted at the same time; and see to what a height they have attained, their long arms twining fondly together, and throwing a dark gloom on the coarse grass and weeds below. You hear a rustle over your head, then another and another, and a loud nasal chattering commences. You look up quietly, and see leaping from bough to bough a party of long-tailed blue birds, displaying their pretty tints at each leap, and spreading their tails to balance themselves as they alight. This is the month of October, and still they are moulting. Presently one sees you, and gives the warning *"carr,"* pronounced nasally and gutturally, as much as to say " an intruder," and with notes sounding something like *"cairn wit-wit twit-twit"* off he flies. All hands follow, each bird as he flies from his perch joining in the chorus " *twit-twit.*" Thus in nearly single file they stream off to the next grove. In July 1858 I found these birds very common near Shanghai, where they were rearing their young in similar groves. Their nests were usually placed close to the top of the fir-trees, and were built exteriorly of sticks, and open at the top, much in the manner of the Jays. As far as habits are concerned, the Blue Pies certainly have far more in common with the long-tailed Jays, *Urocissæ*, than with Magpies; and some of their actions are not unlike those of the large Chinese *Garrulax, G. perspicillatus* (Gm.).

71. Rook. *Corvus pastinator*, Gould.
Hundreds of this bird frequented the large trees around the

Lama temples north of Peking. In the morning they might be seen strutting about the parade-ground and the neighbouring fields searching for food; in the afternoon they would collect in large numbers, and toy and cuff one another among the lofty branches, cawing vociferously. They soon learnt a natural dread of the fowling-piece.

These birds are not uncommon near Shanghai, whence Mr. Gould probably obtained his specimens.

72. BLACK CROW. *Corvus japonicus,* Schlegel.

In close communion with the former I often saw these birds, but they were always distinguishable by their larger size and peculiar cry of "*caw-caw ah-ah.*" They associated in flocks, though never of any great extent.

73. WHITE-RINGED CROW. *Corvus pectoralis,* Gould.

I occasionally saw this species, but it was by no means so common as the last.

74. PIED JACKDAW. *Corvus* (*Monedula*) *daüricus,* Pallas.

Large flocks of these birds were to be found all day long in the fine trees above mentioned, clustering close together on the boughs, and having quiet talks among themselves. As the sun began to set, one would see flocks of thousands coming to Peking from the direction of the hills on the west. Their flight was always high, and their cries incessant. I should say some twenty or thirty of these immense flocks, sometimes mingled with rooks, but more often with individuals of the following species, would pass over of an evening; the majority settling for the night among the woods in the Imperial grounds inside the city, or in he trees of the temples of Heaven and Earth. The rooks would generally leave them and drop into the lama-trees, where they usually roosted. In the morning at day-dawn one would hear their cries again, even before discerning them in the hazy sky, though their flight was then usually much lower.

75. BLACK JACKDAW. *Corvus* (*Monedula*) *neglectus,* Schlegel.

This species was also very numerous, though not so numerous as the last, with which it often associated. Indeed, I seldom saw a flock of either without a few of the cognate species among their number. In habits the two are remarkably similar, as well as in flight and choice of roosting-ground. I much regret I was unable to procure a specimen of this little-known species, but the temple they most frequented was occupied by the troops, and of course all shooting prohibited within the precincts.

76. WHITE-CHEEKED STARLING. *Sturnus cineraceus,* Temm.

Often seen in flocks in September, but not after.

77. SILKY STARLING. *Sturnus sericeus,* Gm.

A few observed in September.

78. RED-CHEEKED STARLING. *Sturnus pyrrhogenys,* Temm. & Schl.

I once saw a few small Starling-like birds that I attributed to this species: it was, I think, in August.

79. WRYNECK. *Yunx torquilla,* L.

I observed this species in August, and have no doubt it travels southward to hibernate. It arrives at Amoy in September.

80. GREEN WOODPECKER. *Gecinus canus,* Gmelin?

M. Zill assured me this was no other than the European species, but I have my doubts on the matter. I send three males and one female. I first met with this bird about twenty miles beyond Tientsin, where the country abounded in woody plantations. It was often to be found on the ground grubbing about the millet roots, and its earth-stained bill gave tokens of frequent insertion into the soil. If suddenly disturbed, it would utter a screeching laugh, and fly off with a series of long undulations to some distant tree, on which it would fix close to the roots and immediately dodge round to the other side, clambering up all the while with a short jerking motion of the body. It rarely ascended into the upper branches, and seemed content with beating the trunk of the tree only, unless the tree separated above into good thick boughs. If the tree to which it next flew was only a few yards off, the bird's flight consisted of a flutter in a direct line. When arrived it would half turn on its back, as it were, and throw up its claws to grasp firmly the bark. Its usual note was sharp and monosyllabic, and differed much from that of its pied brethren. It proved to be very common, and known to the Chinese of the place as the "Tsaou-ta muh-tsze" or "Tree-injurer." It was very tenacious of life, and hard to kill.

The iris was white, with a slight wash of pink. Bill bluish grey, except the basal edge of upper mandible and basal half of lower, which were greenish yellow; legs greenish grey, claws bluish grey. The birds had not completed their moult during September.

81. LARGE PIED WOODPECKER. *Picus cabanisi?*

This species is wonderfully similar to *P. major*, but does not quite tally with M'Gillivray's description. Mr. Blyth identifies the Pied Woodpecker from Foochow and Canton with *P. cabanisi*, and I strongly suspect this is the same, though I have not specimens at hand just now to compare with it. I sent Mr. Sclater a Canton specimen in my last box, and I now enclose the male, procured in the north, so that he will be able to compare and make his comments.

The first and only time I met this species was near Peking on a cold and sunny day in November. The bird uttered the usual "*pic-pic*" of the pied group as it flew away to an adjoining tree, on an upper branch of which it stood and eyed me without showing any signs of fear. I then saw at a glance that it was a larger species than any I had yet met in these parts, and when I shot it I was delighted to pick up what I took to be an old acquaintance.

82. PIED WOODPECKER. *Picus* ——?

I suspect this is a new species. It was quite common in all the groves, but very shy and unapproachable. I only managed to secure one male. M. Zill procured a female, which was similar in all respects to the male, except that the red feathers on the crown were exchanged for black ones, and the top of the beak was black freckled with yellowish grey. This bird generally prefers the higher branches of the trees, round which it dodges, and so eludes observation. If the intruder comes too near, he hears the bird utter the notes "*pic-pic*," and before he can again get a glance at it, the noise of the quick beats of its wing reaches his ear, and he sees the creature disappear with a rise-and-fall flight into an adjoining copse. This bird also often repeats that peculiar rattle that *P. major* is heard to do at home. The noise may well be imitated by pressing one end of a stick on a table and suddenly pushing down the projecting end; the *whirr* thus caused by the vibration will give a good idea of the sound the bird produces. The species seldom alights on the ground, except at the margin of a pool to drink; but it frequently descends to the long maize and millet stalks, and taps them for worms.

83. SMALL PIED WOODPECKER. *Picus* —— ?

A species closely allied to *P. kisuki* of the 'Fauna Japonica,' and to *P. hardwickii* of the Himalayas, but evidently differing from both. I send home two pairs. It was very common, but seldom observable to any but a watchful eye, as it affected the tip-top branches of the highest trees. It remains for long spaces of time on one bough, and does not show half the alacrity in the pursuit of its food that the other species do. It generally prefers the thin dead branches at the tops of forest trees, where, no doubt, it finds a plentiful supply of small maggots, many of which I have taken from the stomachs of those shot. Its cry is a weak attempt at "*pic-pic*;" and its flight, undulatory as in the former instances, is remarkable also for the same noise, produced by quick successive beats of the wing. This peculiar sound of the wings I have also observed in *Parus palustris* of this place, made as the little fellow drops from a high branch down to a lower.

84. CUCKOO. *Cuculus striatus,* Drapiez.

Very common in August and September. I send a male and a female.

85. GREY PERICROCOTE. *Pericrocotus cinereus,* La Fresn.

Common in September. It is strange that this tropical form should be found so far north *.

86. DRONGO. *Dicrurus macrocercus* (Lath.).

Common in September.

87. LUZONIAN SHRIKE. *Lanius luzoniensis,* Strickland.

In a cage only. But as the migration of this bird commences early, that may account for its non-appearance.

88. JAPAN SHRIKE. *Lanius bucephalus,* Temm. & Schl.

Not common. I send an immature specimen shot in September.

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* It is found in summer as far north as the Lower Amoor. See v. Schrenck's *op. cit.* p. 381.—ED.

89. CHINESE ORIOLE. *Oriolus chinensis,* Scop.

Frequent in August and September.

90. LAPLAND TURTLE. *Turtur orientalis* (Lath.).

The only Dove observed. It is found during winter all down the coast as far as Hongkong.

91. RING-NECKED PHEASANT. *Phasianus torquatus.*

We never met with these birds alive, but some were brought for sale to Tangkoo and Tientsin, and the natives assured us they were captured in the neighbourhood.

92. BUTTON QUAIL. *Turnix dussumieri,* Temminck.

Identified by Mr. Blyth, and wrongly named in my Amoy list as *T. jondera,* Hodgson. One of this species was shot in September in a millet field. The same bird is found in spring all down the coast as far south as Hongkong.

93. QUAIL. *Coturnix dactylisonans.*

Very common, even as late as October, in which month immense flocks of them dropped in the neighbourhood of the Taku forts, evidently birds from more northerly parts bound south.

94. PALLAS' SAND-GROUSE. *Syrrhaptes paradoxus* (Pall.).

Your readers will be both surprised and delighted to hear of the abundant occurrence of this species during winter about the plains between Peking and Tientsin. Flocks of hundreds constantly pass over with a very swift flight, not unlike that of the Golden Plover, for which we at first mistook them. The market at Tientsin was literally glutted with them, and you could purchase them for a mere nothing. The natives called them "Sha-chee" or Sand-fowl, and told me they were mostly caught in clapnets. After a fall of snow their capture was greatest; for where the net was laid the ground was cleared and strewed with small green beans. The cleared patch was almost sure to catch the eyes of the passing flocks, who would descend and crowd into the snare. It only remained then for the fowler, hidden at a distance, to jerk the strings, and in his haul he would not unfrequently take the whole flock. Numbers, however, were shot with matchlocks. When on the ground they were rather shy and difficult of approach; but on the wing they would sometimes dart within a few yards of you. They possess rather a melodious chuckle, the only note that I have heard them utter. The natives say that, during the summer, they are found abundantly in the great plains of Tartary beyond the Great Wall, where they breed in the sand.

95. PRATINCOLE. *Glareola orientalis,* Lath.

Common about the marshes near Takoo, where they most certainly breed.

96. VIRGINIAN PLOVER. *Charadrius virginicus.*

97. BUSTARD PLOVER. *Squatarola helvetica,* L.

A specimen kept in an aviary at Amoy showed no change in the plumage all the summer through, retaining the while its winter white breast.

98. LAPWING. *Vanellus cristatus.*

A flock of these birds flapped close over me one cold day in November. It was the only time I saw them.

99. LESCHENAULT'S PLOVER. *Ægialites leschenaultii.*

100. KENTISH PLOVER. *Ægialites cantianus.*

101. PHILIPPINE PLOVER. *Ægialites philippinus.*

102. TURNSTONE. *Strepsilas interpres.*

103. SANDERLING. *Calidris arenaria.*

104. OYSTER-CATCHER. *Hæmatopus ostralegus.*

105. CHINESE SNIPPIT. *Tringa subarquata.*

106. SNIPPIT. *Tringa* —— ?

This bird occurred in great abundance in the marshes during August. It is new to me, so I enclose the only three specimens procured for Mr. Sclater's inspection.

107. MINUTE SNIPPIT. *Tringa minuta.*

108. TEMMINCK'S SNIPPIT. *Tringa temminckii.*

109. LESSER SNIPPIT. *Tringa* —— ?

This I have procured before at Amoy; and though pronounced identical with *T. minuta* by Mr. Blyth, I cannot help thinking it different, and in all probability a new species. I enclose a specimen. Compare this bird's feet with those of *T. minuta.*

110. Rock Tail-wagler. *Tringoïdes hypoleucus,* L.

111. Green Sandpiper. *Totanus ochropus,* L.

112. Wood Sandpiper. *Totanus glareola,* L.

113. Dusty Sandpiper. *Totanus pulverulentus.*

114. Red-shanked Sandpiper. *Totanus calidris,* L.
Tientsin market in December.

115. Whistling Sandpiper. *Totanus glottoides.*

116. Avocet. *Recurvirostra avocetta.*

I saw this bird on the banks of the Peiho in November. It was frequent in Tientsin market.

117. Woodcock. *Scolopax rusticola,* L.

118. Chinese Snipe. *Gallinago megala,* n. sp.

Mr. Blyth has pronounced on a specimen of this bird forwarded to him from Amoy, that it is identical with *G. major*: now I am convinced that it is not. It resembles the Great Snipe, no doubt, in general appearance, but the Great Snipe has *sixteen* obtuse tail-feathers: this bird has *twenty,* five of which on each side are short and narrowed; the outermost being the shortest and the narrowest, the next longer and broader; and so on until the ten centre ones are reached, which are pretty much about of an equal length and of an equal breadth. It approaches, on the other hand, much nearer *G. stenura,* Temm., from which, however, it is at once distinguishable by its larger size, and by the fewer and broader *lateral* tail-feathers; *G. stenura* having, if I recollect right, *seven* very short and very narrow lateral rectrices on each side. I enclose a specimen.

119. Narrow-tailed Snipe. *Gallinago stenura,* Temminck.
Very common in August and September.

120. Snipe. *Gallinago uniclava,* Hodgson.

Closely allied to the European species. Also very common.

121. Curlew. *Numenius major,* Schlegel.

It is hard to discover any difference between this and *N. arcuatus.* Very common in August in the marshes.

122. Heron. *Ardea cinerea,* L.

Common.

123. SMALL BLACK AND WHITE HERON. *Ardea* —— ?

I several times put up a small black and white Heron; but as I was unable to procure specimens, I cannot assign it to any particular species. It may have been *A. goisagi* of the 'Fauna Japonica.'

124. INTERMEDIATE EGRET. *Herodias intermedia.*

I saw one of this species standing in a pool in August; it was much larger than *H. garzetta* and smaller than *H. alba,* and had a *yellow* bill.

125. NIGHT HERON. *Nycticorax griseus* (Linn.).

Common.

125*a*. SPOONBILL. *Platalea leucorodia,* L.

126. COOT. *Fulica atra,* L.

Of frequent occurrence on the Yun-leang Canal. I shot one out of a pair.

127. CRESTED GREBE. *Podiceps cristatus,* L.

128. EARED GREBE. *Podiceps auritus,* L.

129. PHILIPPINE DABCHICK. *Podiceps philippinus,* L.

130. GREY LAG. *Anser ferus,* L.

131. BEAN GOOSE. *Anser segetum,* L.

132. WHITE-FRONTED GOOSE. *Anser albifrons.*

133. SWAN-GOOSE. *Anser cygnoides,* Pallas.

It is difficult to believe that the wild bird is the parent of the domestic Knotted Goose, so different do they look on comparison.

134. SMALL SWAN. *Cygnus minor,* Pallas.

135. GOOSANDER. *Mergus merganser,* L.

136. SAW-BILL. *Mergus serratus,* L.

137. SWAN. *Mergus albellus,* L.

138. SHELDRAKE. *Tadorna vulpanser.*

139. RUDDY SHELDRAKE. *Casarca rutila.*

140. MALLARD. *Anas boschas,* L.

141. BAIKAL TEAL. *Querquedula glocitans* (Pall.).

142. FALCATED TEAL. *Querquedula falcaria* (Pallas).
I send a female of this species.

143. COMMON TEAL. *Querquedula crecca* (Linn.).

144. PINTAIL. *Dafila acuta* (Linn.).

145. WIGEON. *Mareca penelope* (Linn.).

146. SCAUP. *Fuligula marila* (Linn.).

147. TUFTED DUCK. *Fuligula cristata* (Leach).

148. GOLDEN-EYE. *Clangula glaucion* (Linn.).
I send a male and female of this species. The male was purchased in the Tientsin market; the female was shot by Major Sarel on the lakes in the Emperor's Summer Palace Park.

149. GREAT NORTHERN DIVER. *Colymbus glacialis*, L.

150. CORMORANT. *Phalacrocorax carbo* (Linn.).
Often seen on the inland waters.

151. COMMON GULL. *Larus canus.*

152. HERRING GULL. *Larus argentatus.*

153. BLACK-TAILED GULL. *Larus melanurus,* Temm. & Schl. Faun. Japon. pl. 88.
All these Gulls have been shot at Amoy, and are, I *think,* correctly identified.

154. KITTLITZ'S GULL. *Gavia kittlitzii.*

155. GULL. *Gavia* ——?
A species with red bill, black towards tip, and orange-ochre legs; somewhat allied to *G. ridibunda.*

156. CASPIAN TERN. *Sterna caspia,* L.

157. SWIFT TERN. *Sterna velox,* Rüppell.

158. LESSER TERN. *Sterna minuta,* L.

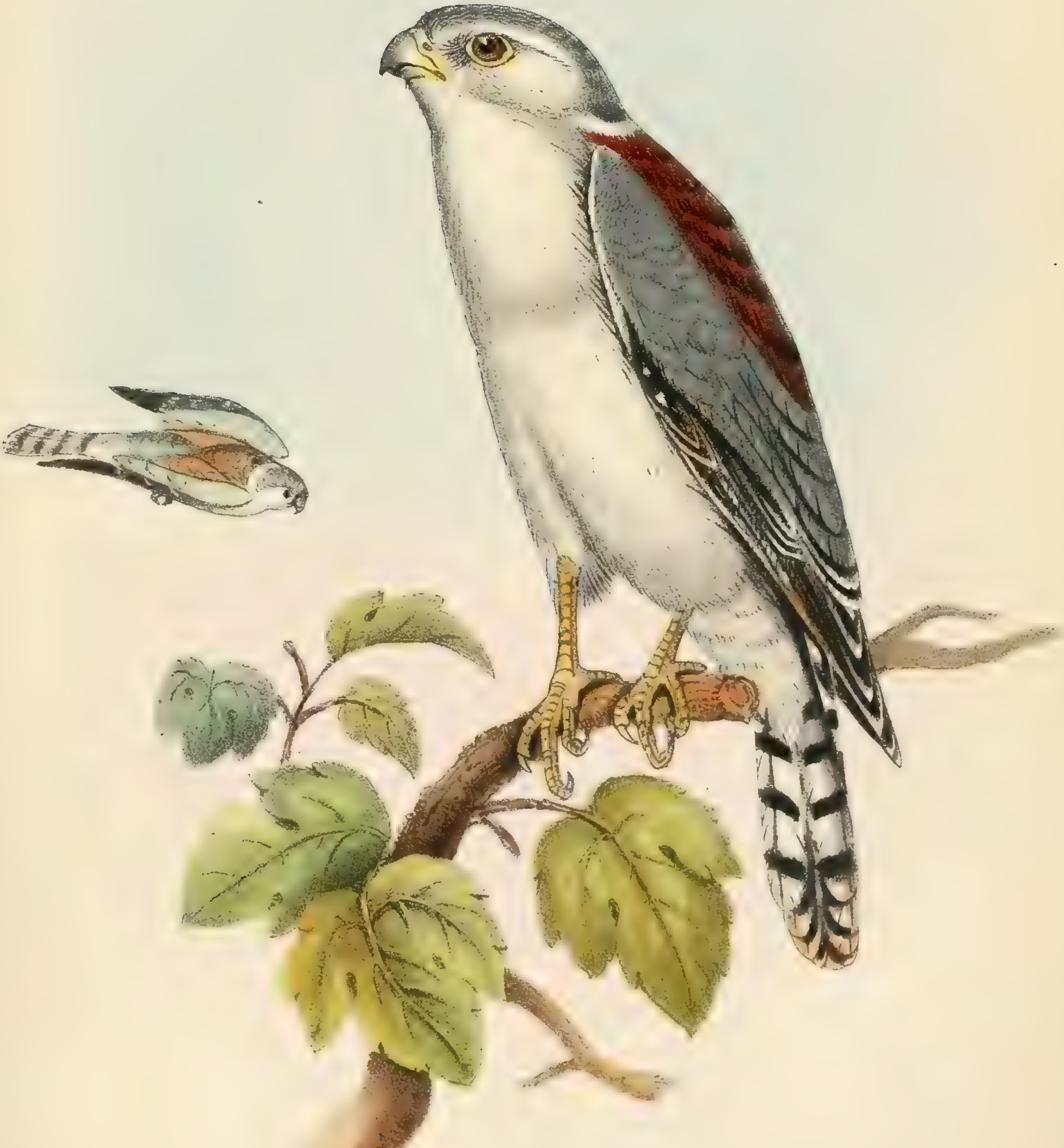
159. JAVAN TERN. *Hydrochelidon javanica* (Horsf.).
All these Gulls and Terns were common about the marshes in August and September. Of the last I send a few specimens.

XXXVII.—*Note on the* Hypotriorchis castanonotus *of* Dr. HEUGLIN. By P. L. SCLATER.

(Plate XII.)

THE series of Abyssinian birds collected by Sir William Harris during his residence at Schoa, which was formerly in the Museum of the East India Company in Leadenhall Street, having been transferred to the British Museum, I have been enabled, through Mr. George Gray's kindness, to compare the specimen entered in Horsfield and Moore's Catalogue of the East India Company's Museum as "*Polihierax semitorquatus*" with typical examples of the true *Falco semitorquatus*, Smith, collected in South Africa by the describer of the species. In the first place I should mention that the Abyssinian specimen of Sir W. Harris has not the red back, which is stated by Dr. Heuglin to be found in both sexes of his *H. castanonotus*. This point of difference, therefore, which seems to be the chief ground on which Dr. Heuglin has maintained the specific distinction between his bird and the southern *Falco semitorquatus*, seems to fail entirely; and we must suppose that Dr. Heuglin is in error in stating that the male of the Abyssinian bird, when adult, resembles the female in having a red back, although this may be the case in young males. On comparing the Abyssinian bird with the South African specimen in corresponding plumage, the differences which present themselves are but slight. The head and neck are of rather a darker slaty-grey, the wings rather longer, and the legs generally rather stronger and stouter in the Abyssinian specimen; but the two birds are otherwise so much alike, that I should much hesitate in considering them as specifically distinct. The white external marginations of the ends of the rectrices appear to be of about the same extent in both specimens.

The figure (Pl. XII.) is an exact copy of Dr. Heuglin's original figure of *Hypotriorchis castanonotus*, which accompanied his description of the bird as already given in 'The Ibis' (1860, p. 407). It represents, according to him, an adult male, two-thirds of the natural size. Dr. Smith, in his 'Illustrations of the Zoology of South Africa,' has figured the female of *Polihierax semitorquatus*; but this is, I believe, the first published representation of the



red-backed stage of plumage in this little-known species of Accipitrine.

XXXVIII.—*Notes on the Ornithology of Timor.*

By Alfred Russel Wallace.

In pursuance of my plan of exploring the Zoology of the Malayan Archipelago, I have just completed a three-and-a-half months' residence at Delli, in the eastern part of the island of Timor, and have devoted myself principally to the Birds, every other class of animals being very poorly represented in this barren island.

Owing to ill-health, the wet season, and a rebellion of the native tribes, I was unable to extend my excursions far from the town of Delli. I resided, however, in one of the most fertile valleys, about two miles from the town, and spent two weeks on the mountains at an elevation of 2000 feet. I was accompanied on this excursion by Mr. Geach, a mining engineer, who has been engaged here for more than two years in search of minerals, during which time he has traversed the island in several places from sea to sea, and who is altogether better acquainted than any person living with the eastern half of Timor.

From this gentleman I obtained much information as to the character of the country, which seems to be very uniform, and not likely to be more productive in any other parts than in those that I have explored.

Timor seems to consist entirely of a chain of mountains, rising in the central range to 5000 and 6000 feet, and near either coast to about 3000. In only two or three places in the island are there any level plains, the rest being a succession of mountainous ridges and precipitous ravines. Nowhere in the island are there any forests comparable with those of the other parts of the Archipelago, all the lower hills being covered with an open growth of more or less scrubby *Eucalypti*, and anything like a lofty or luxuriant vegetation being confined to those places in the ravines or on the mountain spurs where a little rich soil has been accumulated. At a height of above 4000 feet even this vegetation disappears, and a scanty herbage of coarse grasses alone covers the higher ridges. Fruit-bearing trees are comparatively scarce, and in the dry season extensive tracts of country are destitute of water, circumstances not likely to be favourable to bird-life.

Notwithstanding these disadvantages, however, I have obtained upwards of a hundred species of birds, about two-thirds or perhaps three-fourths of which number are altogether peculiar to the island of Timor, although closely allied to those of the surrounding countries. Australian forms are, as might be expected, the most numerous, and it is from that country that Timor has evidently derived the greater portion of its birds. Even where the genus is widely distributed we can often see that the particular species has been derived from Australia, as *Artamus perspicillatus* and *Aprosmictus vulneratus,* which are slight modifications of Australian species; while others, as *Amadina castanotis,* have remained altogether unchanged. On the other hand, the resemblance to the Moluccas is very slight. *Lorius, Eos,* and all the characteristic forms of New Guinea, are quite wanting; and there are only three birds that seem to have been derived from the Moluccan or Papuan faunas—viz. *Geoffroius jukesii, Ptilonopus flavicollis,* and *Ianthœnas metallica.* The relation is equally slight to Celebes, and is shown only by the *Turacœna modesta,* closely allied to the *T. manadensis,* Q. & G., of Celebes, and the *Ptilonopus cinctus,* forming, with the *P. gularis* of Celebes, the subgenus *Leucotreron,* Bp. I very much regret not having obtained the other species of this interesting group, which my friend Mr. Geach assures me are found in the interior of the island. In particular he mentioned a species resembling the *P. cinctus,* but in which the white forms a ring round the neck, and his opinion was that there existed in Timor three or four species of the same group having the colours differently distributed.

Besides the birds already mentioned, and which are all more or less characteristic of the Australian region, Timor contains an important Indian element, consisting of Javan species or their representatives. The genera *Lanius, Cyornis, Treron, Gallus,* and *Estrelda* occur here, but are not found in any part of the Moluccas, and only one or two of them in Celebes. About thirty species thus appear to have been derived from Java, which, though 600 miles distant from Timor, is connected with it by a chain of islands; and between these more than twenty miles of sea nowhere intervenes, so that the passage across might have been easily effected by the progenitors of these birds, which are all capable of greater powers of flight than the circumstances would require.

The absence of *Megapodius* from Timor—a fact already noticed by the Dutch naturalists, and which all my inquiries tend to confirm—is a very singular one, because the genus exists in every other island of the Australian region, and even in the little island of Semao, at the west end of Timor. I can only conjecture that it may have been exterminated by the Tiger-cat, said to exist in the interior. Taking into consideration the absence of such characteristic Australian birds as *Dacelo, Malurus, Cracticus,* and *Casuarius,* together with the non-existence of a single Australian genus of Mammals, I cannot believe that Timor has ever been actually connected with Australia, though the sea which separates them has probably been much narrower than at present, as is indicated by the great Sahul bank, which now extends from the shores of Northern Australia to within twenty miles of the south coast of Timor.

We may therefore, I think, fairly look upon the fauna of Timor as almost entirely derived by immigration from the surrounding countries, and subsequently modified by the reciprocal action of the species on each other and by the influence of a new vegetation. In accordance with this view we find the external relations of the genera and species of which it is composed varying in degree with the varying distances of the surrounding lands, and the probability of the reception of immigrants from them.

The Dutch naturalists who explored the interior of the west part of Timor seem to have collected a great many birds, and some French expeditions have also visited it. It thus happens that most of the species are already known, though I suppose many of them are rare in collections. I have 10 species of Pigeons; and there is still *one,* mentioned in Bonaparte's 'Conspectus' as *Ptilonopus viridissimus,* which I have not met with. *Trichoglossus euteles* was very abundant on the flowers of the *Eucalypti*; a smaller red-capped species (*T. iris* ?) also occurred;

but the beautiful *T. hæmatodus* seems rare, as I never saw a specimen, and with difficulty obtained two live ones in the town. I observed it in the island of Semao two years ago, but could not obtain an example. There are said to be one or two more *Psittaci* in the island, but I could see nothing of them. I obtained 3 Ducks, 5 or 6 Herons and Egrets, and a fine *Himantopus* (perhaps the *H. leucocephalus* of Australia), and that is all worth mentioning. I was much disappointed in not finding the beautiful *Pitta irena,* but presume it inhabits the interior only.

I have long been of opinion that there is no foundation whatever for the very prevalent idea that tropical heat and light have some direct or specific effect in producing the brilliant colours that adorn birds, or insects, or flowers. Here, in Timor, the birds are remarkably dull in colour; and I think a fair average comparison will show that even chilly England possesses more beauty among the common birds that give the character to the ornithology of the country than this tropical island. Out of the 100 species of birds I have collected here at Delli, I only find four that are at all brilliant in colour—viz. *Cinnyris solaris, Chalcophaps,* sp., *Estrelda,* sp., and *Ianthœnas metallica*; and I think I am correct in saying, that in any part of England we could find in the same time a larger number of species more or less adorned with brilliant colours, and at least as many which might be called pretty or ornamental.

That the larger number by far of brilliant birds do exist in the tropics cannot be disputed; but that climatal or solar influence has anything to do with the fact there is not the slightest evidence, while there is much that contradicts the supposition. And first, why does this supposed influence never act on those families and genera which are equally abundant in the temperate and tropical regions? Why are not tropical Ducks and Accipitres, Larks, Crows, Warblers, Goat-suckers, and Finches, much more brilliant on the average than those of temperate and northern regions? Again, when stragglers from purely tropical families occur in the north and south, why are they not the dullest-coloured of their group? Instead of being so, they are fully up to the average of beauty. Our Kingfisher, Roller, and Bee-eater, the northern and southern Humming-birds, the *Psittaci* of Temperate Australia, are rather above than below the average brilliancy of their tropical allies.

We must remember that the tropical fauna almost always extends *beyond* the geographical tropic, and thus comprehends the largest part of the earth habitable all the year by birds. Moreover it is one mass, while the temperate regions are divided; and most important of all, owing to the perennial presence of fruits and insects, a far greater number and variety of birds can exist there than in the colder parts of the earth. It follows, therefore, that if the proportion of bright- to obscure-coloured birds is the same everywhere, yet the tropics must produce the largest actual number, and it has yet to be shown that this proportion is greater in the tropics. Such extensive tropical families as the *Trochilidæ, Trogonidæ, Cotingidæ,* and *Tanagridæ,* consisting almost entirely of gay-coloured birds, will immediately occur to every one; but on the other side may be set the *Todidæ,* Bp., *Thamnophilidæ, Anabatidæ, Dendrocolaptidæ, Capitonidæ,* and others equally tropical and as remarkable for their generally obscure coloration.

Here the amount of colour would almost seem to be in inverse proportion to the amount of solar light; for while no island has more clear sky and bright sunshine than Timor, its birds are far less brilliant than those which dwell amid the gloomy forests and ever-cloudy sky of the Moluccas and New Guinea.

On the whole, therefore, I cannot but believe that a careful investigation of the facts will show that there exists no immediate connexion between tropical heat and light and brilliancy of colour in any department of nature; and I am sure that on no subject does a greater amount of misconception prevail than on the relative beauty of nature and display of colour in temperate and tropical regions.

Delli, Timor, April 20th, 1861.

XXXIX.—*A List of Species to be added to the Ornithology of Central America.* By Osbert Salvin, M.A., F.Z.S.

The following list of birds is derived partly from a collection brought over by Mr. Robert Owen from Vera Paz, partly from a revision of my own collections (which has led to the discovery of several species accidentally omitted in former lists), and partly from other authentic sources.

Mr. Owen's collection was formed mainly by Cipriano Prado, who went as far as Chisec on the Rio de la Passion, and Filipe Sierra, who collected at Teleman and Panzos on the Rio Polochic. The rest were procured by Mr. Owen himself in the vicinity of Coban and San Gerónimo. Amongst the birds collected by Cipriano Prado, not mentioned in this list, occur two specimens of a *Coccothraustes*, marked by him male and female, and which he shot together (so he told Mr. Owen) near Coban. These agree, on comparison, the male with *C. abeillii*, and the female with *C. maculipennis*, Sclater; and I cannot help thinking that these two supposed species are actually the male and female of one, which should be called by Lesson's name, *C. abeillii*. One female, marked so from dissection, shot by myself near Dueñas, and agreeing with Mr. Sclater's type of the supposed male *C. maculipennis*, confirms me in this idea. Another interesting bird is a *Sclerurus* (which I have referred to *S. guatemalensis*, Hartl.), showing that two species of the limited genus *Sclerurus* occur in Guatemala. There is also a female of a species of *Myrmotherula* which I have been unable to determine, no male specimen having been sent. This is the most northern locality for any species of this genus hitherto recorded.

PASSERES.

1. CYPHORHINUS PHILOMELA, Salvin, P. Z. S. 1861, p. 201.

Several specimens. I have no doubt that this is the bird I heard in the mountains and described (Ibis, 1861, p. 143) as having great powers of song. In the dense forests it is a difficult bird to see, but its notes may very frequently be heard.

2. CERTHIOLA MEXICANA, Sclater, P. Z. S. 1856, p. 286.

Apparently very common in Central Vera Paz. I have received many specimens from Chisec and other localities in the same region, all agreeing very closely with one another.

3. GUIRACA CÆRULEA (Linn.); Baird, B. Am. p. 499.

Though not of very common occurrence, this species is pretty generally distributed throughout Vera Paz. I met with it myself in the plain of Salamá, and all the collections from the warmer districts to the northward of Coban contained examples. It has been accidentally omitted from the previous lists.

4. EMBERNAGRA CHLORONOTA, Salvin, P.Z.S. 1861, p. 202.
Chisec. Several specimens.

5. CASSIDIX ORYZIVORA (Gm.); Cab. Mus. Hein. p. 194; Moore, P. Z. S. 1859, p. 57.

Included in Mr. Moore's list of the birds collected by Leyland in Honduras.

6. CYANOCITTA CRASSIROSTRIS, Bp. Consp. p. 378; Pucheran, Rev. Zool. 1858, p. 198. *Pica beecheyi*, Eyd. et Gerv. Mag. de Zool. 1836, p. 26, pl. 72, et Voy. Favorite, pl. 20; Moore, P.Z.S. 1859, p. 57.

Guatemala (Morelet), Mus. Paris: Belize, Honduras (Leyland).

7. PICOLAPTES LINEATICEPS, Lafr. Rev. Zool. 1850, p. 277; Sclater, P. Z. S. 1860, p. 252.

The specimen mentioned as having been observed on the Pacific coast (Ibis, 1859, p. 117) belongs properly to this species, and not to *P. affinis*, as there stated. It is not improbable that *P. lineaticeps* is an inhabitant exclusively of the warm, and *P. affinis* of more elevated regions. All the specimens of these two species that I have collected lead to this conclusion.

8. DENDROMANES HOMOCHROUS, Sclater, P.Z.S. 1859, p. 382.
One specimen, with others of *D. anabatinus*, occurs in the collection from Chisec. Neither species of this singular form appears to be common either in Guatemala or Mexico.

9. SITTASOMUS SYLVIOÏDES, Lafr. Rev. Zool. 1849, p. 331, et 1850, p. 590.

Two specimens from Chisec.

10. XENOPS MEXICANUS, Sclater, P. Z. S. 1856, p. 289.
Apparently common throughout the "tierra caliente" of Vera Paz.

11. FORMICARIUS MONILIGER, Sclater, P. Z. S. 1856, p. 294.
Several specimens collected at Chisec.

There is also in the collection one skin of *Grallaria guatemalensis,* a bird which I have hitherto only known from specimens procured by Mr. Skinner. *G. guatemalensis* appears to be quite distinct from the Mexican *Grallaria* (which Mr. Sclater now calls *G. mexicana*), being considerably smaller in size and having the under parts more rufous.

12. CONTOPUS BRACHYTARSUS, Sclater, MS. *Empidonax brachytarsus,* Sclat. Ibis, 1859, p. 441.

Two specimens of this Tyrant were collected by Mr. Fraser at Escuintla.

13. APHANTOCHROA ROBERTI, Salvin, P. Z. S. 1861, p. 203.

This Humming-bird and *Campylopterus cuvieri* of Gould ought, perhaps, to be placed in a separate subgenus, as being distinct from both *Aphantochroa* and *Campylopterus.*

14. MOMOTUS CASTANEICEPS, Gould, P. Z. S. 1854, p. 154; Sclater, P. Z. S. 1857, p. 254.

Though Coban is given as the locality in which M. Delattre found this Mot-mot, I somewhat doubt its accuracy, as no specimen has ever come into my hands from that place. In the plain of Zacapa and in the adjacent country, the commonest species is one which answers best to *M. castaneiceps,* many specimens of which I have seen, but never obtained. M. Delattre collected in other parts of Guatemala besides Coban, and it is very possible that the true locality of this bird may have been wrongly given.

15. CHRYSOTIS XANTHOLORA, G. R. Gray, List of Psittacidæ, p. 83.

The specimen in the British Museum is marked "Dyson, Honduras," and I therefore include it in this list. It differs from *C. albifrons,* its nearest ally, in having yellow lores and black ear-coverts. The dark edgings to the feathers of the back are also more strongly shown.

ACCIPITRES.

16. HYPOTRIORCHIS DEIROLEUCUS (Temm.). *Falco deiroleucus,* Temm. Pl. Col. 348.

Among some old skins belonging to Mr. Meany, of Guatemala, I picked out a specimen of this Hobby, the finest, perhaps, of the genus. The skin is of an adult female and in good condition. Mr. Meany had received it from Vera Paz.

17. Accipiter pileatus, Max.

This bird having occurred in M. Sallé's collection from South Mexico, might naturally be expected to be found also in Guatemala. I have now two specimens from Vera Paz, both in the immature dress. They were shot by Juan Prado, who has certainly been most fortunate in obtaining rare birds of prey.

18. Ictinia mississippiensis, Wils.; Baird, Rep. p. 37; Cassin, Ibis, 1860, p. 103.

One specimen from Coban occurs in the last collection, but *I. plumbea* is by far the commonest species of *Ictinia* in Vera Paz. The present bird is clearly distinguishable from that species, the differences being rightly pointed out by Mr. Cassin (*l. c.*). I am not aware of any other specimen of this Hawk existing in this country except the one in the British Museum. It appears to be almost as rare in North American collections.

19. Scops flammeola, Licht. in Mus. Berol.; Kaup, Trans. Zool. Soc. 1859, p. 226.

One specimen of this rare Owl was shot by Mr. Owen in the mountain of Santa Barbara, near San Gerónimo. M. Sallé's Mexican collections, I believe, contained but one example, which was placed in the late Prince Charles Bonaparte's private collection.

Columbæ.

20. Chlorœnas flavirostris, Wagl. Isis, 1831, p. 410; Sclater, P.Z.S. 1856, p. 309.

Volcan de Fuego. Collected by Mr. Fraser.

21. Leptoptila ——?

Several specimens of a third species of this genus, which may possibly be the *Columba erythrothorax* of Temminck. It is certainly distinct from either *L. albifrons* or *L. rufaxilla*.

Gallinæ.

22. Tinamus robustus, Sclater, P.Z.S. 1860, p. 253.

I obtained two eggs of this species in Yzabal in 1859. They are of a greenish blue, like those of *T. major* of Brazil. An egg of *T. meserythrus*, procured by Mr. Owen, is of a reddish chocolate-brown colour. A specimen of that of *T. sallæi*, in the British Museum, is a creamy white. Other eggs of species belonging to this peculiar family in my collection tend to show that even a specific character may very fairly be assumed from the different colours of the eggs, so decidedly are differences shown in the eggs of such *Tinami* as I have been able to determine satisfactorily.

23. TINAMUS MESERYTHRUS, Sclater, P. Z. S. 1859, p. 392.

A considerable series of this species shows a great constancy in its colouring. One specimen—no doubt a young one—has the chestnut-red of the breast much less strongly shown, and there is an indication of barred markings on the sides and wings. The egg is of a reddish chocolate-brown.

24. TINAMUS SALLÆI, Bp. Compt. Rend. xlii. p. 955; Sclater, P. Z. S. 1859, p. 392.

Chisec.

25. TINAMUS BOUCARDI, Sclater, P. Z. S. 1859, p. 391.

In addition to these four species of Tinamou, Mr. Owen states that there is another belonging to the smaller section of this family. Of this fifth species I hope shortly to obtain specimens.

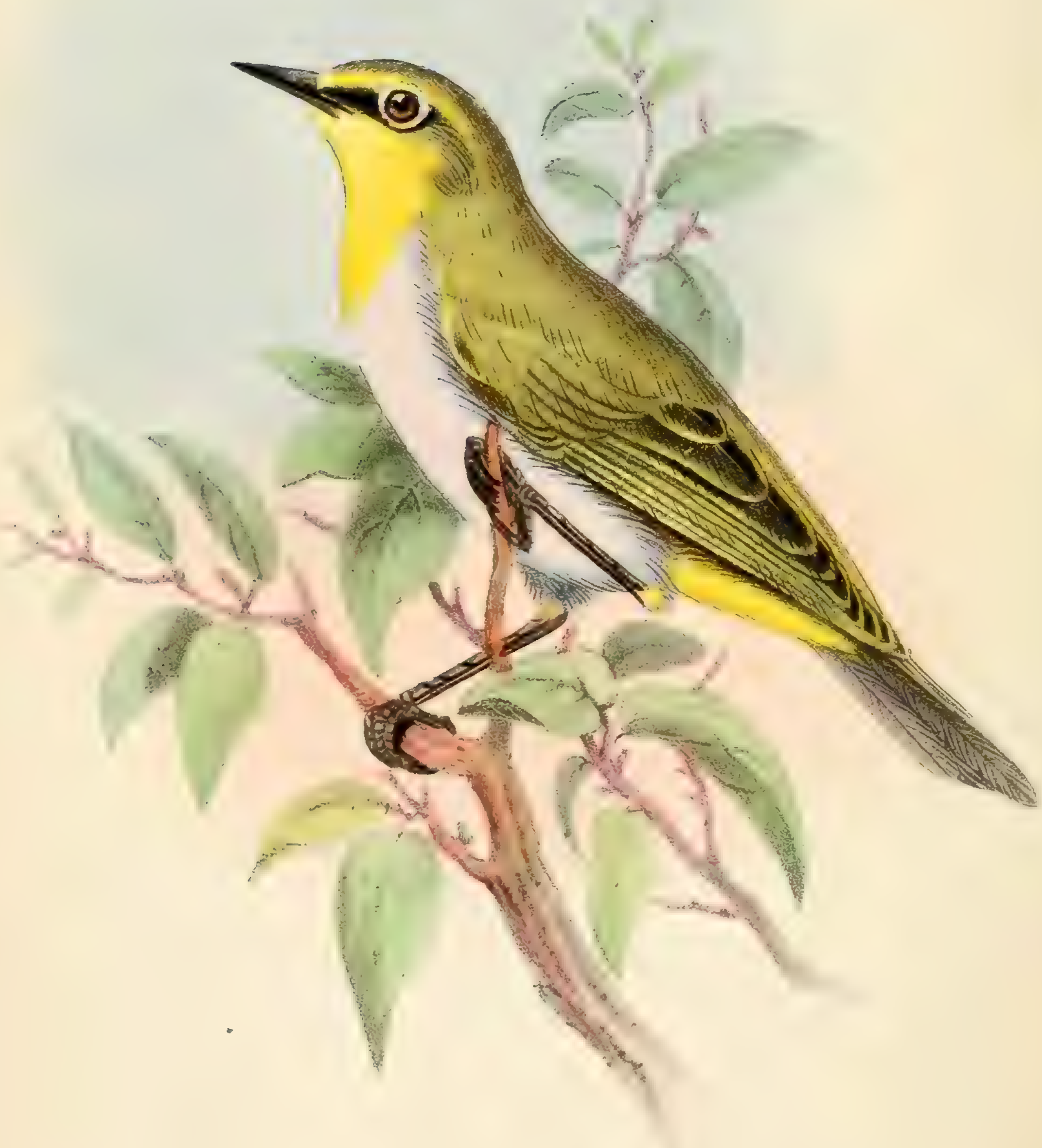
GRALLÆ.

26. NUMENIUS BOREALIS, Lath.; Baird, Rep. p. 744.

A single specimen of this well-known North American bird was sent home last autumn by Mr. R. Owen. It was shot at San Gerónimo.

27. ŒDICNEMUS BISTRIATUS, Wagl. *Œ. vocifer*, L'Herm. Mag. de Zool. 1837, pl. 84; Owen, Ibis, 1861, p. 68.

Mr. Owen has given an account of the breeding habits of this bird in this Journal (*antea*, p. 68). I believe it occurs in most of the plains of moderate elevation, such as that of Salamá, and no doubt is the species observed by Mr. Taylor on the plain of Comayagua in Honduras (Ibis, 1860, p. 314). It is a bird easily tamed, and may frequently be seen in the "patios" or courtyards so characteristic of Spanish American houses.



28. Nycticorax violaceus, Linn.; Baird, Rep. p. 679; Moore, P. Z. S. 1859, p. 63.

Included in Mr. Moore's list of the birds collected by Leyland.

XL.—*On a new African Species of the Genus* Zosterops.

By Th. von Heuglin*.

(Plate XIII.)

The genus *Zosterops* (a very circumscribed and very distinct one, though not very rich in species) is found over nearly the whole of Africa, in Madagascar, Australia, some parts of Northern Asia, and in the Southern Indian Islands. I discovered a new species in the high mountainous districts of Abyssinia, easily to be distinguished by its very large eyes and eye-rings, and by its breast and upper abdomen being of a pure grey. In my "List of N.E. African Birds," printed in the 'Transactions of the Vienna Academy,' I have enumerated this new species under the name of *Z. euryophthalma*, but now I prefer changing this name into

Zosterops poliogastra. (Pl. XIII.)

Supra virescenti-flava; superciliis gutture et subcaudalibus sulphureis; pectore et epigastrio obsolete cinereis; abdomine medio pallidiore; remigibus et rectricibus fuliginosis, extus virescenti-flavo marginatis, illis intus basin versus albidis; subalaribus albis, flexuram alæ versus virescente tinctis; tectricibus caudæ superioribus fere totis flavis; macula nigra inter oculum et rictum; regione parotica viridi-nigricante; annulo periophthalmico nitide sericeo-albo; tibiis griseis, flavescente tinctis; rostro nigerrimo; pedibus plumbeis; iride brunnea.

Long. 4″ 3‴; rostr. a fr. 4‴; al. 2″ 5‴; caud. 1″ 9‴; tars. 8‴.

The male is a little more brightly coloured than the female. The first primary is 2″ shorter than the second, third, and fourth, which are the longest. This pretty species lives on the highlands of Abyssinia; I found it there in the month of February and March in wooded districts, on *Euphorbiæ* and olive-trees, at an elevation of 10–11,000 feet.

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* Translated and edited by Dr. G. Hartlaub.

The well-known African species of *Zosterops* are the following:

a. ZOSTEROPS.

1. Z. CAPENSIS, Sundev.

Olivaceo-viridis, subtus sordide cinereo-albida; gula crissoque flavis; loris nigro-fuscis, linea superiore flavescente; hypochondriis grisescentibus; annulo periophthalmico nitide albo; rostro nigro; iride brunnea.

Long. 4½″; rostr. a fr. 4‴; al. 2″ 3‴; tars. 8¾‴.

Syn. Sundev. Öfvers. af Kongl. Vetensk. Akad. Förhandl. 1850, p. 102. *Le Tchéric,* Le Vaill. Ois. d'Afr. pl. 132. *Z. Vaillantii,* Reichenb. Meropin. p. 89, t. 460. figs. 3281–86; Grill, Zool. Anteckn. p. 38.

Inhabits the most southern portion of Africa. Common about Cape Town (Wahlb.); Victoria, &c. Stationary and solitary in Central, North, and Eastern Abyssinia (Heuglin, Rüppell, &c.).

With Sundevall and Reichenbach, we believe the very nearly allied *Madagascar* species to be distinct. It is a smaller bird, and wants the dark, blackish lores.

2. Z. MADAGASCARIENSIS (L.).

Supra cum alis et cauda olivacea, capitis lateribus olivaceis; annulo periophthalmico nitide albo; mento et gula flavissimis; pectore abdomineque albido-cinerascentibus; subcaudalibus, cruribus et subalaribus flavis; rostro nigricanticorneo, basi mandibulæ pallida; pedibus brunnescentibus.

Long. 3½–3¾″; rostr. a fr. 4½‴; al. 1″ 11‴; caud. a bas. 14‴; tars. 7‴.

Syn. Ficedula madagasc. minor, Briss. Orn. iii. p. 498, pl. 27. fig. 2. *Motacilla madagasc.,* L. *Sylvia annulosa,* Sw. Zool. Illustr. pl. 164. *Z. flavigula,* Sw. Menag. p. 294; Reichenb. *l. c.* p. 90, t. 460. fig. 3289; Hartl. Orn. Madag. p. 40.

Specimens from Bernier and Goudot in the Paris Museum. Our description is from a fine specimen in the Stuttgardt collection.

3. Z. LATERALIS, Sundev.

Supra pallide olivaceo-viridis, subtus albida, lateribus griseofulvescentibus; gutture crissoque flavis; loris flavis; gula leviter fulvescente tincta; annulo periophthalmico conspicue albo; rostro nigricante.

Long. 4″; al. 2″ 2‴; tars. 8‴.

Syn. Sundev. Öfvers. Kongl. Vetensk. Ak. Förhandl. 1850, p. 101. *Z. abyssinica,* Guér. Rev. Zool. 1843, p. 162.

Upper Caffraria (Wahlb.). Abyssinia (Galinier et Ferret).

There can be but little doubt about the identity of the North-eastern and the South-African bird. Sundevall himself seems to believe in it, but not feeling quite sure about the meaning of Guérin's expression "pulveris colore," prefers giving a new name to the Caffrarian *Zosterops*.

4. Z. POLIOGASTRA, Heugl.

5. Z. PALLIDA, Swains.

Pallide griseo-olivascens, subtus flavescenti-alba, abdomine et hypochondriis isabellino tinctis; alis et cauda pallide brunneis; subalaribus albis; subcaudalibus stramineis.

Long. circa $3\frac{3}{4}''$.

Syn. Swains. Anim. in Menag. p. 294.

South Africa (Burchell).

6. Z. CHLORONOTOS (Vieill.).

Capite, collo et interscapulio ardesiaco-cineraceis, pileo paulum olivaceo lavato; tergo, uropygio, alarum tectricibus remigumque marginibus externis læte flavo-virentibus, mento et gula albidis; pectore cinerascente; subalaribus albis; hypochondriis rufescentibus; subcaudalibus dilute flavis; annulo periophthalmico niveo; rostro brunneo, subtus pallidiore; pedibus pallidis.

Long. $3''$ $10'''$; rostr. a fr. $5\frac{2}{3}'''$; al. $1''$ $10'''$; caud. $15'''$; tars. $7'''$.

Syn. Certhia chloronotos, Vieill. Ois. Dor. pl. 28. *C. borbonica,* Gm. *Zosterops curvirostris,* Swains. B. W. Afr. ii. *Z. curvirostris,* Blyth, Journ. As. Soc. Beng. xiv. p. 363; Reichenb. fig. 3287; Hartl. Orn. Madag. p. 44.

Madagascar, Mauritius, Bourbon.

The description is from a fine specimen in the Bremen collection.

7. Z. HÆSITATA, Hartl.

Supra in fundo cinerascenti-olivaceo induta, sincipite subnigricante; subtus cinerea; abdomine imo conspicue rufescente, uropygio, remigum et rectricum marginibus externis lætius virentibus; annulo circa oculum niveo; subcaudalibus dilute flavis; rostro nigro; pedibus pallidis.

Long. $4''$; rostr. a fr. $5\frac{1}{3}'''$; caud. $15'''$; tars. $8'''$; dig. med. $6'''$.

Syn. Hartl. Orn. Madag. p. 41.

Bourbon (Leclancher). Two specimens in the Paris collection. A very large species.

8. Z. SENEGALENSIS, Bonap.

Supra læte virescenti-flava, subtus pure et dilute flava; lineola nigra inter oculum et rictum; annulo periophthalmico nitide albo; subalaribus flavis; rostro et pedibus nigricantibus.

Long 4¼″; rostr. a fr. 4½‴; al. 1″ 11‴; caud. 13‴; tars. 6¾‴.

Syn. Z. flava, Swains. B. W. Afr. ii. p. 43, pl. 3. *Z. citrina,* Hartl. Beitr. Orn. Westafr. p. 22. *Z. senegalensis,* Bp. Consp. p. 399; Reichenb. Meropin. p. 90, fig. 3288; Hartl. Syst. Orn. Westafr. p. 72. *Z. icterovirens,* Herz. v. Würt. Icon. ined. t. 41. *b.*

Inhabits Senegambia. The description is taken from a specimen from the Casamanse River. Atbara (Herz. v. Würt.). A careful and repeated examination of the very fine figure in the Duke of Würtemberg's 'Icones ineditæ' leaves me no doubt as to the identity of his *Z. icterovirens* with the well-known Senegal species, *Z. senegalensis.*

9. Z. VIRENS, Sundev.

Flavo-viridis; gastræo flavo, exceptis hypochondriis conspicue virescentibus; loris nigris, superne flavis; rostro nigro; pedibus fuscis.

Long. 4½″; al. 2″ 2‴; tars. 5¼‴.

Syn. Zosterops virens, Sundev. Öfvers. Kongl. Vetensk. Akad. Förhandl. 1850, p. 101.

Inhabits Upper Caffraria (Wahlb.).

Nearly allied to the preceding, but larger and greener. Certainly distinct.

b. MALACIROPS.

10. Z. BORBONICA (Briss.).

Supra cinerea, subtus alba, lateribus pallide brunnescente lavatis; rectricibus et remigibus fuscis, his dorsi colore fimbriatis; subalaribus et subcaudalibus albis; rostro fusco; pedibus pallidis.

Long. 4″; rostr. a fr. 4‴; al. 2″ 1‴; caud. 1″ 2‴; tars. 7½‴.

Syn. Ficedula borbonica, Briss. Orn. iii. p. 510, pl. 28. fig. 3. *Le petit Simon de Bourbon,* Buff. Pl. Enl. 105. fig. 2; Hartl.

Ornith. Madag. p. 40. *Malacirops borbonica,* Bonap. Notes s. l. Coll. Del. p. 56; Reichenb. fig. 3290. *Figuier de l'Isle de France,* Buff. (*Motacilla mauritiana,* Gm. ?). *Z. cinerea,* Swains. ?

Found in Madagascar and the Mascarene Islands. A specimen received from Goudot in the Paris collection is a little more brownish; perhaps a female.

c. SPEIROPS.

11. Z. LUGUBRIS, Hartl.

Supra olivacea, pileo nigricante, uropygio viridi-flavescente; fasciola inter rictum et oculum annuloque periophthalmico, hoc minus conspicue, albis; subalaribus et flexura alæ pure albis; gutture pallide cinerascente; pectore et abdomine dilute brunnescenti-olivaceis; rostro brunneo; pedibus carneis; iride nigra.

Long. 5″ 2‴; rostr. a fr. 4½″; al. 2″ 8½‴; caud. 2″; tars. 8¼‴.

Syn. *Zosterops lugubris,* Hartl. Rev. Zool. 1848, p. 108; Id. Beitr. z. Orn. Westafr. p. 49; Id. Abhandl. Naturw. Ver. Hamb. ii. p. 49, t. 2. fig. med.; Id. Syst. Orn. Westafr. p. 72. *Speirops lugubris,* Reichenb. Merop. p. 93, fig. 3306.

Confined to the Island of St. Thomas. We have examined two specimens (Hamb. Mus.).

Less typical. The largest Zosteropine species of Africa.

XLI.—*A Fortnight in the Dobrudscha.*

By W. H. SIMPSON, M.A., F.Z.S.

THE Austrian steamer from Constantinople to Galatz being caught in a gale of wind off Varna, on Sunday, April 15, 1860, was obliged to run for shelter behind the point of Kali Akra, the eastern horn of Baltschik Bay, where she lay for thirty-six hours, secure from the furious nor'-easter, which drove the scud at hurricane speed just over the 300 feet cliffs that protected us from its fury. This is the first view which the traveller from the south has of the coast of the Dobrudscha, and if he has previously indulged in the popular error that that region is a low-lying swamp, he will here have an opportunity for correcting his geography. But unless he wishes to find himself alone in the midst of a somewhat lawless Turkish population, he will hardly care to land here in order to improve his ornithology, though he might probably long to explore those cliffs if the captain would guarantee that the steamer would not sail without him. As, however, the captain of an Austrian 'Lloyd's steamer' is too great a personage to be lightly addressed, especially on an occasion when his feelings are aggravated by the dread of being driven ashore, he, the traveller, will have to postpone his explorations until the steamer arrives off Kustendjé, where, if the fog and swell permit, he may land in the new harbour which is being there constructed by an English Company in connexion with the Danube and Black Sea Railway, of which Kustendjé is the eastern terminus. This was my case. It had, indeed, been darkly intimated to the passengers that the vessel would be obliged to go on through the Sulina channel to Galatz—a circuit of 200 miles for any one wishing to reach this place. Fortunately the fog, which had succeeded the gale, cleared up on the morning of the 17th, and revealed to us the earthy cliffs which form the distinctive feature of this part of the coast of the Dobrudscha.

The first object that greeted my arrival in port was a flock of Little Gulls (*Larus minutus*) flying about in the harbour. This I considered a good omen, and even indulged in hopes of finding their breeding-quarters, as many were already in good plumage. This species was subsequently noticed in immense numbers between the 20th and 24th, especially on the first of the above dates. At that time the bulk of the flocks were frequenting a lake of fresh water called "Sud Geul," which extends for several miles in a northerly direction parallel to the sea, from which it is separated by a narrow isthmus. On this occasion the flocks of *Larus minutus*, associated with a few individuals of *Sterna cantiaca*, were literally swarming in the air a few feet above the surface of the water, like swallows over a river on a summer's evening. Far as the eye could reach, looking northwards down the lake, these elegant little birds were to be seen on the feed, dashing to and fro most actively. In most of them the head and upper part of the neck were of a brilliant jet-black, producing a singular effect in the mass when contrasted with the white of the rest of the plumage. Upon those which were nearest, a faint rosy tinge, confined to the upper part of the breast, was also noticeable. This, I think, is more marked in the living bird than in preserved specimens. In the distance they looked like musquitoes over the water, the flocks probably extending to the farthest end of the lake, which cannot be less than eight or ten miles off. Here, then, it seemed was the home of the birds, for which the late John Wolley and myself, misled by a false description, had vainly sought in Öland during the spring of 1856. The isthmus between the lake and the sea, uneven with swampy hollows and dry hillocks that support a coarse and scanty vegetation, might surely be their appropriate breeding-places, where, in company with Terns, Pratincoles, Stilts, *et hoc genus omne,* they might be expected towards the end of May to deposit their eggs. Never was there a greater mistake. A few days later and the thousands have become hundreds, yet a few days more and these will have dwindled down to tens, so that, by the middle of May, it is possible that not a pair will remain behind. Doubtless they continue their northward journey along this coast of the Black Sea; but it is in the marshes and lakes of Central Russia, in the great plains of the Volga, and possibly also in those of the Bug, the Dneiper, and the Don, that oologists must look for eggs of *Larus minutus.*

In order to make the following notes more intelligible, it would be well to attempt a slight description of the chief features of the Dobrudscha,—not, indeed, with any pretensions to accuracy, as a fortnight's sojourn in a district so little travelled as this is only just sufficient to make a person wish to know more of it. One thing, however, is obvious enough, viz., that the country, instead of being a marsh, much more resembles the downs of the chalk formation, being in fact very dry, except in a few parts to be more particularly mentioned subsequently. As the fate of Lord Cardigan's cavalry and also of the French expeditionary column is well known, an impression has gone abroad that the Dobrudscha is marshy and malarious. The bones of the unfortunate soldiers composing the latter forces were but lately to be seen on the heights of Kustendjé; but whether the men died of cholera, or any other disease, want of water was much more likely to have been a predisposing cause than the excess of it.

The region north of Baltschik Bay, as far as the delta of the

Danube, appears then to consist of an undulating upland, having its watershed within a few miles of the Black Sea, to which it slopes rather rapidly. The point where the Danube and Black Sea Railway (about forty miles in length) crosses the height of land is very near its eastern terminus. Speaking from memory, the elevation is between 250 and 350 feet. Further north, at Baba-dagh, where primary or plutonic rocks are said to burst through the calcareous strata forming the main bulk of the mass, these elevations are greatly exceeded. The Danube below Silistria, flowing eastwards, is gradually deflected northwards by this mass, as it cats its way into the cliffs on the Bulgarian shore as far as Tchernawoda, where it is within forty miles of the sea. At this point its course is completely turned, at first even a little towards the W. of N.; but although foiled in its attempts to penetrate the uplands of the Dobrudscha, its summer floods appear to have inundated the numerous valleys that debouche upon it. What share the river itself may have had in the erosion of these valleys is, of course, a geological question. Thus are formed chains of lakes and swamps, which constitute the real marshes of the Dobrudscha. The aspect therefore which this district presents to the Danube, its western boundary, is that of an immense in-curving sweep of land about 300 or 400 feet high, which often comes to the water's edge in low precipices of a softish rock, apparently calcareous, but which is also perforated by swampy hollows reaching far back into the heart of the country. The view from these heights, looking immediately down upon the chief arm of the river, and across into the low-lying but richly wooded islands of Wallachia, is probably one of the most striking in Turkey. It suggests the idea of standing on one of the bastions of an immense fortress, which has the largest river in Europe for its ditch. In this region may be seen the Griffon and Cinereous Vultures, the Egyptian Neophron, Sea-Eagles in plenty, the Imperial Eagle, and a small dark variety of the Golden Eagle. Some of these are pretty sure to be on the wing, not to mention the less obvious birds of prey, which breed in the almost boundless extent of forest and morass that covers the flat islands stretching northwards and westwards till lost in the distant horizon.

Reverting, however, for the present to the coast, we find that, where the earth-cliffs do not come down directly to the sea, lakes both of salt and fresh water intervene. These are generally separated from the sea by strips of land, such as the one previously described at Sud Geul. Towards the north the lakes are more extensive. The earth-cliffs about Kustendjé are much resorted to by birds for breeding, from the facility with which they are perforated. The Eagle-Owl (*Bubo maximus*) has been known, though not quite lately, to have its eyrie on a very accessible ledge in one of these faces; but it is not likely this will occur again, owing to an increase in the European population hereabouts. The Turk is a true friend to all birds, and never molests them; but where Franks and Greeks abound guns become numerous, and birds diminish. The Ruddy Shelduck (*Tadorna rutila*) breeds in these places, as also in the holes of Trajan's wall, and in other holes up the country. Eggs, however, of this bird would be of no value to collectors unless authenticated, as the other species occurs sparingly. Though plentiful, it is by no means easy to obtain the eggs. I and my friend spent the greater part of a day in driving a tunnel into a bank where one had been seen to come out. But our labour was in vain; for after advancing several yards, working one at a time, prostrate, and in the dark, the original hole was found to fork off into two branches. The natives sometimes obtain a sitting which is hatched, and the young ones are brought up for domestic purposes. Starlings and Jackdaws (always *Corvus collaris*: see 'Ibis,' vol.ii. p.355) are likewise fond of these cliffs. *Acridotheres roseus* has also been noticed, but not by me; it may be seen at times sparingly mixed with the other Starlings. This bird, as is well known, breeds in large colonies in parts of Asia Minor, though at irregular intervals; it is not supposed that it ever breeds here. A few Gulls frequent these cliffs, but they were very scarce in the month of April, and being rather shy from frequent shooting, I was not able to handle a specimen. Judging from a distance, *Larus fuscus* and *L. argentatus* seem to prevail. We picked up the remains of a Shearwater in the very last stage of decomposition; it appeared to be *Puffinus anglorum*. I fancy this is the species so numerous on the Bosphorus, where long files of them are ever flying through the channel—an up and down train several hundred yards in length being often in sight at the same time. These are the *âmes damnées* of sultanas who got the sack under the old régime, each separate train being perhaps part of the establishment of a different Sultan. Not that all these poor restless spirits were necessarily frail ones: harems must have been expensive in those days, as they were lately proved to be under Sultan Abdul Medjid, and when the inmates became ugly or strong-minded, the sack was more economical than a pension.

To the north of where these earth-cliffs terminate, the lakes, backwaters, and rough sand-hills intervening between the sea and the uplands are sure to be favourite places of resort for Waders and Wild-fowl during the spring and autumn flights; these being from their position a place of call as it were on the direct line of East-European migrations, a sort of halfway house between the South and the North. Pelicans bound for the musquito-haunted delta of the Danube; Ducks, Geese, Plovers, and Snipes, of many species besides those which breed here, on their way to Poland and Russia; Stints from their African winter-quarters going to Lapland, Siberia, and the farthest north,—all are likely to be met with here at their respective seasons. Excepting my two visits to Sud Geul, I never had an opportunity of examining this district; but on one of those occasions a flock of Pelicans (probably *Pelecanus onocrotalus*), consisting of several thousands, was noticed moving northwards at an immense height. Tribes of Cossack fishermen prey upon the fowl hereabouts; they have the reputation of being very active eggers. We ourselves took the nest of a Wild Goose (believed to be *Anser ferus*). I noticed also Stilts (*Himantopus candidus*), which undoubtedly breed here, the Double Snipe, Common Curlew, Common Snipe, and Kentish Plover amongst the Waders, besides the Hooper (*Cygnus musicus*), Common Wild Ducks in great quantities, the Shoveler, Pochard, and Garganey, and some other ducks not made out with equal certainty. To the great numbers of *Larus minutus* allusion has already been made. Strange to say, the birds of prey, so numerous generally in the Dobrudscha, were not well represented here, possibly for want of appropriate breeding-places. The Marsh Harrier seemed to be cock of the walk in default of any nobler bird. I found a new nest of this species in some reeds, and an old nest in a low blackthorn bush by the water's edge. There is another Harrier also pretty numerous here, the same which is so extremely abundant on the uplands. I presume it to be *Circus cineraceus,* but not having succeeded in shooting one, could not undertake to say for certain.

The old Turkish town of Kustendjé covers the low promontory which partially protects the harbour. The new town is built higher up, on the edge of the undulating plateau of the Dobrudscha—an open treeless tract of country very much like what the downs of Newmarket and the heaths of Suffolk may have been in former times. Trajan's wall runs across from here in a westerly direction to the Danube. Besides the wall of Trajan, there are many interesting remains of antiquity at this place, which occupies the site of ancient *Tomi.* If Ovid had been a sportsman and naturalist, he might have found abundant consolation in his exile; but having been in all probability indifferent to the advantages of Bustard-hunting, and totally unable to appreciate the ornithological riches of the country, he seems to have found the place very dull. In the face of a ravine on the edge of the new town, recent excavations have laid bare some Roman temples and other remains. These the railway authorities, with more zeal for the improvement of the harbour than for the conservation of antiquities, are using up in the formation of the new breakwater. Thus unhappy *Tomi* is being disinterred only to be re-entombed in the waves. A facetious acquaintance observed, that when the breakwater is finished, a monument should be erected at the extremity with "Here lies Tommy" by way of epitaph! Wheatears and Hoopoes frequent the old stones that are lying about. The latter bird is very tame, and a great ornament to the place; but I fear that, as far as Kustendjé is concerned, his epitaph too may shortly be wanted. Numerous tumuli, attributed, with what reason I do not know, to the Tartars, occur on the plateau; to some of these the Ruddy Shelduck is very partial.

The birds of the plateau or open down-country come next under our observation. Here it must be remembered that there is not a tree or fence of any kind to break the uniformity of the scene. From some points along the height of land the sea bounds the view on the east: all else is the land of grass, with here and there a patch of corn, according as the fancy of some enterprising individual may have sown it. Not grass, however, in the sense of our English turf; nowhere in the East is such a thing to be found; but yet a goodly supply of herbage such as might feed thousands of sheep. A few low blackthorn bushes occasionally dot the surface. Towards the end of April they are just coming out into blossom, giving a pleasant air of spring as one passes by. To believe that such bushes, sometimes only a foot in height, will hold an Eagle's or Harrier's nest, requires a considerable amount of faith; yet this is undoubtedly sometimes the case. Generally, however, the Eagle (*Aquila nævia*), which mostly haunts these downs, has its nest upon the ground. I found, or was directed to, no less than four, two of which were on the ground, under the shelter of bushes; two were on the bare plain. Out of the whole four I only got two eggs, and these very poorly-marked specimens. From some cause to me inexplicable the eggs were generally broken, the fragments being sometimes trailed several yards from the nest, which is itself a slight structure composed of a few sticks with a lining of wool carelessly arranged. In one was a piece of coloured cloth. The old bird, of course, sees any one approaching a long way off, and may, in consequence, attempt to carry away the eggs. There are, however, several Grey Crows (*Corvus cornix*) on the look-out for waifs and strays, and these may be at the bottom of the mystery. The Spotted Eagle is generally a tree-building bird, but here it seems to confine itself to the open country, where probably it feeds largely upon the lizards and small animals that are so numerous. I made several attempts to procure a specimen, but without success; neither could I obtain one of the Harrier (supposed to be *Circus cineraceus*), which is perpetually hawking the Grey Partridge on these downs. One of the favourite breeding-places of this bird is along the banks of Trajan's wall so called, but which is really a system of mounds and ditches more or less perfect.

The westward slope of the height of land in the neighbourhood of Trajan's wall is also favourite ground for Bustards, especially for the Little Bustards. These latter arrive from the south rather before the middle of April, in flocks of considerable size, many staying to breed here whilst others are moving further north. The male birds are particularly demonstrative at this time of the year, and being often occupied in parading their attractions in groups of ten or a dozen to the females which are crouching somewhere in the grass, they are not so wide awake as at other seasons, and thus afford a better chance to the gun. On foot, even with a rifle, it is not easy to reach them; but with an araba judiciously managed, very fair sport may be had. After a few months' experience of the stony mountains and dense coverts of Greece, nothing can be more exhilarating than a gallop in an araba over the breezy downs of the Dobrudscha in early spring. It is true that at starting you expect concussion of the brain must necessarily ensue, as there are no roads, and your driver dashes over all minor inequalities of the surface; but this feeling soon goes away, and you get on famously until a wheel comes off, or until you make the unpleasant discovery that your powder-flask has been rattled out of the cart, in which latter case you face about and retrace your track till it is found. In these expeditions I and my friend R. B. used to take it in turns to drive and shoot. But supposing all these little mischances are overcome and Bustard-ground fairly reached, a wild yet pleasing scene it is, on a sunny spring morning, such as those which we had the good fortune to enjoy. On all sides an undulating prairie, solitary in the extreme, yet not destitute of bird-life. The traveller on his way back from the south will here see the well-known Skylark (*Alauda arvensis*), breeding plentifully in the midst of *A. cristata* and *A. brachydactyla*. The Grey Partridge keeps pretty close, but occasionally one will get up, in spite of the numerous Harriers that contribute further to enliven the landscape, which also is seldom free from the presence of one of the grass-breeding Eagles (*Aquila nævia*). Occasionally Vultures may be seen soaring aloft. Both *Gyps fulvus* and *Vultur monachus* have been noticed: once I shot at an individual of the latter species with a pistol. Now and then passes a troop of Ducks or Wild Geese, a flock of Waders, or perhaps a few stray Terns and Gulls, on their way to the marshes. Often too the Ruddy Shelduck may be seen, watching its opportunity for popping unnoticed into its hole in a mound or tumulus. Presently some Bustards are descried on the opposite slopes, and away we gallop towards them. It may so happen that they take the alarm and fly before we are within a quarter of a mile. The Great Bustard almost invariably does; but the Little Bustard, besides being more plentiful, is less wary, and often takes no notice of the araba. Arrived within 200 yards, we commence "great circle sailing," gradually shortening the distance, though, to the flock, we seem ever going away from them. The pace is now a good trot, and the great thing is to pull up dead when about 40 yards off, firing the instant the birds rise, which they are pretty sure to do as soon as the machine stops. We found by experience that 40 yards was about as close "shaving" as the birds would stand; and at that distance it was not always a kill, especially if the horses were not perfectly quiet. If a bird was hit, but not brought down, we galloped after him at full speed, when, finding he could not get away from us, he would often crouch, and under these circumstances it was very difficult to find him. We used to get down from the araba and almost walk over them before they would get up. They are slow risers generally, but when once fairly on the wing, go at a slashing pace. On getting up, the Little Bustard makes an odd rattling noise, very similar to that produced by a bird-scarer, such as is used in gardens. In this description of sport only one person can shoot at a time; but, in fact, there is as much fun to be had, and more skill to be displayed, in managing the horses so as to place the araba in a favourable position, than in shooting the game. Our best bag in one day was seven brace, of which number eleven birds were males in splendid plumage. The flesh is dark, and at this season rather strong, but in a hungry country like the Dobrudscha one is not apt to be particular.

Those portions of the country towards the west which are skirted by the Danube are most abundant in species, and in birds usually accounted rare, that is to say, but seldom met with in Western Europe. The same treeless character prevails here as in the uplands, which probably do not differ much in their ornithological character from the district nearer the Black Sea. The change is principally to be noticed in the bottoms of the valleys communicating with the great valley itself, which, being below the level of high-water mark of summer floods, are converted into chains of small lakes and marshes stretching some way back from the rivers. Here also there are trees, mostly willows, few in number, and small in size compared to the magnificent trees which fill the islands of the Danube on the Wallachian side, where an immense territory of alluvial forest-clad plains presents a marked contrast to the open and undulating Dobrudscha. Throughout this region, including also the lateral valleys, Herons, Storks, and allied *genera* are especially numerous. The Common Stork (*Ciconia alba*) abounds, and may be seen wading deliberately on the edge of every pool. All the villages, particularly in the Turkish quarters, are full of their nests, from which they keep up a perpetual clapping with their mandibles, the only sound they seem capable of producing. On the 1st of May, passing through a village inhabited by Wallachians, I saw several very tempting nests, and being desirous of securing a sitting, mentioned my wish to a wily Greek, whose services had been engaged for the day. We called at a house to obtain a boat upon the adjoining lake, and whilst Demetri drew off the attention of the owner, I placed a ladder against the wall, ascended, and, before the man had time to turn round, was down again, with the Stork's eggs in my pocket. There were four of them slightly incubated. This was the only nest ever taken by me, out of scores in that neighbourhood. The reeds on the lake were much frequented by Herons. A nest of the Purple Heron had been taken the day before, and the eggs of course eaten, much to my annoyance. The Little Egret (*Herodias garzetta*) was also numerous, but had only arrived lately, as I should imagine from their being there in small flocks moving about from one place to another. Later in the season the Glossy Ibis (*Falcinellus igneus*) is here to be met with; but there was no account of the Great White Egret (*Herodias alba*) breeding in these parts, though doubtless they are to be met with on some of the swampy wood-covered islands of the Danube.

The circumstances attending the discovery of the nests of *Aq. imperialis* and *Falco sacer* have been already narrated ('Ibis,' vol. ii. p. 375). In addition to the Raptorial birds previously mentioned as occurring here, a single specimen of a bird, believed to have been Bonelli's Eagle (*Aquila bonellii*), was observed upon a low cliff overlooking one of the small lakes. These low cliffs which flank the lateral valleys, and occasionally the stream of the Danube itself on the Bulgarian shore, are favourite places for the larger birds of prey. It was supposed that the Cinereous Vulture (*Vultur monachus*) might be found breeding here, as the bird is not at all uncommon, especially during the summer. No nest of this species was, however, discovered, though we found one or two of the Griffon (*Gyps fulvus*). As an instance of the closeness of this bird's sitting, I may mention that, on my being lowered by means of a rope to a nest in a cliff overhanging the Danube, the old bird was actually touched by my foot before she would move. The nest contained a young one lately hatched, which was of course left. This sudden popping out of the huge Griffon so upset my equilibrium that I should certainly have fallen into the river if not upheld by the cord. The Egyptian Neophron (*Neophron percnopterus*) also frequents these cliffs: fresh eggs were to be had towards the end of April.

Birds of prey are not the sole tenants of these rocks. The Black Stork (*Ciconia nigra*) also breeds here; at least we discovered one nest in a very peculiar position for a bird which has the reputation of breeding in the densest thickets of impervious morasses. The cliff in this case was about sixty feet high, the strata being horizontal or nearly so. In the face of the upper ledge there had been at some time, artificially excavated in the soft stone, a chamber having a sort of antechamber, which communicated by means of a couple of steps with a crack in the rock. This crack was not difficult to reach from the top when the exact path was once known. The chamber itself had much the appearance of a hermit's cell; but as the aperture in the face of the cliff was the entire width of one side, the apartment was airy and cheerful, commanding a fine view of the valley below. Altogether it was a place where one could have had no objection to put up for a few days in case of necessity. Here it was that a pair of

Black Storks had taken lodgings for the season, as we found out one morning about the 27th of April. Some little time elapsed before we discovered the secret of the entrance from the top, a fact of which the Black Storks were probably not cognizant. At the time of our first visit there were no eggs, nor indeed was there anything exactly worthy of the name of a nest. But in the floor of the chamber was a circular depression about the size and shape of a large dinner plate, not far from the edge of the aperture. For what singular purpose this depression, evidently artificial, had been made, was to us as great a mystery as the origin of the entire excavation. The Black Stork had evidently thought she could put it to some use, for it was here, upon a few dry sticks which partially filled the depression, that she meant to lay her eggs. As it was necessary for me to leave Turkey altogether about the 4th of May, it was agreed not to approach the place again till the day before my departure. In the interim I used occasionally to take a stroll down the valley, and seat myself on the opposite hill, where, through the telescope, I could see the Black Stork sitting composedly on her makeshift of a nest, looking like some spirit of darkness in its cave. Already I was counting the eggs, which would undoubtedly have been mine but for the evil curiosity of a Transylvanian shepherd, who had noticed me spying into the hole, and had perhaps seen us entering it. On the appointed day I rode over with my friend R. B. Dismounting at the edge of the cliff, we crept down to the crack in the rock, and thence through the artificial passage into the chamber itself. Neither bird nor eggs were visible; some great catastrophe had happened, and the eggs I had counted on, though laid, were missing. It transpired that the Transylvanian had done the deed, having probably sucked the eggs on the spot. We sought him everywhere in the desperate hope that he might have preserved them, perhaps also with the view of taking the change out of him in some other way in the extremely probable event of their not being forthcoming. Fortunately for the Transylvanian he was not to be found.

Through the kindness of my friend I was not wholly disappointed after all. The Black Stork returned to her nest and laid two more eggs, which he secured and brought over to England the following summer. These are now in my collection. They are smaller than eggs of *Cic. alba,* from which also they may be distinguished by a very faint greenish tinge to be noticed on closer inspection.

XLII.—*Abstract of* Mr. J. WOLLEY'S *Researches in Iceland respecting the Gare-fowl or Great Auk* (Alca impennis, *Linn.*). By ALFRED NEWTON, M.A., F.L.S.

As from various causes some time must pass before I can hope to find leisure to arrange the mass of information respecting the Gare-fowl or Great Auk (*Alca impennis,* Linn.) collected by Mr. John Wolley, and continue the inquiries commenced by him on that subject, so as to publish the details in a fitting manner, several of my friends have urged me not to delay making known more fully than has been done the results of that gentleman's researches when in Iceland, in which researches I had, to some small extent, the pleasure of assisting him. Independently of these recommendations, I am influenced by the consideration that I ought not to withhold from naturalists what is likely to be interesting to some of them; and, still more, that, were I to do so any longer, I should run the risk of losing to my late friend's reputation the credit which, from his labours, of right belongs to it. But I trust it will be understood that, in this paper, I make no pretence of giving anything like a complete history of the bird; for that is a task for which, at the present moment, I am certainly not competent, however much I may hope some day to achieve it. I only wish to place on record certain facts which Mr. Wolley was able to ascertain.

As long ago as the year 1847, Mr. Wolley's attention was directed in an especial manner to the Great Auk, and during 1851 and 1852 he bestowed much pains in investigating its history from the works of old naturalists and travellers. When I was with him in Lapland in 1855, we often discussed the chances of its continued existence, finally pledging each other to make a joint expedition to Iceland as soon as it could be conveniently performed. At the same time, I have no wish to underrate the impulse given to my friend's enthusiasm, and through him to my own, during his visits to Christiania and Copenhagen the following year, when he first heard of the discoveries of the late Herr Peter Stuvitz and Professor Steenstrup, and besides made the personal acquaintance of the last-mentioned illustrious naturalist, who soon after published so valuable a contribution to this bird's history*.

In this paper, therefore, I do not mean to refer much to the bird's appearance in other localities, except in one instance to correct a very prevalent misapprehension. But, on the other hand, I do not claim entire novelty for several of the statements I have to make. Some of them have already found their way into one book or another—sometimes rightly reported, sometimes wrongly. Nor do I profess to be sure that the account I have to give is always the true one. It must be remembered that the results here recorded are the main points of evidence deduced from many authorities, and offered by nearly one hundred living witnesses; and though I do not doubt that the greater number of these latter are persons of eminently truthful habit (for such is the natural characteristic of the Icelander), yet some few there are who may have wilfully told falsehoods. Nor should it be forgotten that it is, humanly speaking, impossible for any two persons, however honestly disposed, to give identically the same version of the same events, though most generally in such cases the variations will be unimportant. Add to this that much of the evidence, though written down at the time by Mr. Wolley (whose note-books I have carefully consulted) in a most painstaking manner, had to pass through an interpreter; and, as nearly all of it referred to a period of many years ago, it will not be surprising if some inaccuracies have crept in.

The particular misconception to which I wish to draw especial attention is, that the Great Auk is, or was, a bird of the *far* North—indeed, of the Polar regions. That such an opinion prevails, one has only to refer to authorities generally received by ornithologists of all countries. Professor Steenstrup, in the paper to which I have alluded, has conclusively shown it to be unfounded, without, however, having been able to trace the error satisfactorily to its source. For myself, I imagine it to have originated in the inadvertence of naturalists, which, in the case of northern localities, leads them to speak of Spitzbergen, Greenland, and Labrador as if they were synonymous, or at least interchangeable terms. Regarding it in this light, long before we had heard of Professor Steenstrup's conclusions, Mr. Wolley and I had satisfied ourselves that statements like Temminck's, that the Great Auk "vit et se trouve habituellement sur les glaces flottantes du pôle arctique, dont il ne s'éloigne qu'accidentellement" (Man. d'Orn. ii. 940), were entirely contrary to fact. There is, I believe, but one reliable instance on record of the Gare-fowl* having occurred within the limits of the Arctic Circle. This is the example said to have been killed on Disco in 1821, and which, after changing hands several times, is now in the University Museum at Copenhagen. The fact has been for the first time recorded in the present volume ('Ibis,' 1861, p. 15), and my friend Professor Reinhardt there expresses his belief that "the accounts of other instances, in which the bird is said to have been obtained in Greenland, are hardly to be confided in†."

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* Videnskabelige Meddelser for Aaret 1855. Kjöbenhavn. 1856–1857, pp. 33–116.

There is, I take it, nothing which should really lead us to infer that the Great Auk ever visited Spitzbergen‡. The first English writer to whom I can trace the report is Mr. Selby (Brit. Orn. ii. p. 433); and that distinguished ornithologist has lately most kindly informed me that the making mention of that locality was a mistake, which would have been rectified had another edition of his work been required. As to Norway, the only supposed instance of its occurring there within the Arctic Circle is that mentioned by Professor Steenstrup (*l. c.* p. 95, n.), and is doubtful enough. Herr Laurenz Brodtkorb, of Wardœ, in 1855, told Mr. Wolley, repeating the story afterwards in my presence, that in 1848 he shot a large diving-bird, of which he did not know the name, on a flat rocky skerry off Reenœ. He felt very certain that it was not a Great Northern Diver (*Colymbus glacialis*); but he assured us that its beak was like a Guillemot's (*Uria*)—that is, narrow and pointed—and not like a Razor-bill's (*Alca*), thick and truncated. He was equally sure that there was still a pair or two of his species to be found among the Guillemots which breed on this spot. Mr. Wolley, in a letter I received from him about this time (1855), naïvely remarks, "I could not see one; but some of the birds were off their eggs;" and I feel bound to say that, though Herr Brodtkorb has a practical knowledge of ornithology, I cannot consent to his opinion that the bird he shot was a Great Auk*.

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* It may seem somewhat pedantic to revive this ancient and almost forgotten name. In using it I am chiefly influenced by the fact that Mr. Wolley had intended to have employed it.

† I have spoken of the above as a "reliable instance" of an Arctic Great Auk; but I am not sure that even this is free from doubt; for in a letter Professor Reinhardt tells me he has "had some suspicion" whether the reported Disco specimen of 1821 has not been confounded with one asserted by the late lamented Governor Holböll (Kröyer's Tidsskrift, iv. p. 457) to have been obtained at Fiskernæs (*South* Greenland) in 1815. *If this suspicion be correct, the Gare-fowl has probably never once occurred within the Arctic Circle.*

‡ Cf. Ibis, 1859, pp. 173, 174.

Were I about to give a full and detailed account of the Gare-fowl, I should think it best to divide the evidence collected into two classes: (I.) that which may be considered documentary, and (II.) that which is merely oral; again separating this latter into (1) what is only traditional, and (2) what has actually come to my informant's personal knowledge. In the present case, however, I believe it will be most convenient to take the various matters as far as possible in the order of the time to which they refer. But I must first enter upon a brief description of the localities to which I shall have to allude.

Any person who will take in hand the beautiful map of Iceland, executed by Herr O. N. Olsen from the surveys of the veteran Björn Gunnlaugsson, and published in 1844 under the auspices of the Icelandic Literary Society†, will find the name

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* I may add, that near Wardœhuus, between the fortress and the shore of the inlet (Vest-Vaagen), on a raised sea-beach, is a vast bed of bones, chiefly those of birds, but mingled with them a few Seals'. We brought away a considerable quantity of specimens; and on some other occasion I may probably give an account of them; but I am sure that they do not include a single fragment which could possibly be a Gare-fowl's.

† Uppdráttr I'slands, à fjórum blöðum gjörðr að fyrirsögn O'. N. O'lsens, gefinn út af Enu I'slenzka Bókmentafèlagi. Reykjavík og Kaupmannahöfn, 1844.

'Geirfuglasker' (Gare-fowl skerry) occurring in three different places. The most eastern is situated some thirty miles from the coast, off the island of Papey, and the entrance of Berufjorðr, about lat. 64° 35′ N., and long. 26° W. (of Greenwich), and is commonly known to Danish sailors as Hvalsbak (Whale's-back). The most southern is one of the Vestmannaeyjar (Westman Islands), in about lat. 63° 20′ N., and long. 33° 5′ W. The most western is off Cape Reykjanes, in about lat. 63° 40′ N., and long. 35° 50′ W. It was accordingly our first object to ascertain how far these spots now deserved the name they bore. On making all the inquiries we were able on our arrival at Reykjavik, we could obtain no recent information respecting the eastern skerry, of which we had, at starting, entertained most hopes. It appeared also that, of the travellers who in the last century had published accounts of their journeys in Iceland, Olafsen and Olavius only had alluded to this isolated rock as a station for the bird*, though another of them, the Færöese, Mohr, was in 1781 for no less than two months at Djupivogr, on the mainland opposite, engaged in the pursuit of natural history†. We therefore decided we would not attempt the journey thither, at the risk of missing what seemed a better chance—that of finding the object of our search in the neighbourhood of the western locality, where examples of the bird were known to have been last obtained. At the same time, we thought it highly desirable that this eastern Geirfuglasker should be visited, and through the intervention of several kind friends, we at last met with a gentleman who was willing, for a suitable recompense, to undertake the toilsome, not to say dangerous, expedition. To dismiss this part of the subject at once, I may here say that our envoy, Herr Candidatus-Theologiæ Eiríkur Magnusson, a native of that district, reached Berufjorðr in the month of June, and then, taking a boat, proceeded to the island, round which he rowed, quite close enough to satisfy himself that there were no Gare-fowls on it;

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* Reise igiennem Island, &c. af Eggert Olafsen. Soröe, 1772, p. 750.
Oeconomisk Reyse igiennem de nordvestlige, nordlige, og nordostlige Kanter af Island ved Olaus Olavius, &c. Kjöbenhavn, 1780, ii. p. 547.

† Forsög til en Islandsk Naturhistorie, &c., ved N. Mohr. Kiöbenhavn, 1786, p. 383.

but he was prevented by the unfavourable state of the weather from landing. On his return next month to Reykjavik, he informed us that there were no traditions in that part of the country of the bird ever having been there. Respecting the second Geirfuglasker I have mentioned, that which forms one of the Vestmannaeyjar, we heard on all sides that it was yearly visited by people from the neighbouring islands, and, though we were told that some fifteen years before a young bird had been obtained thence*, it was quite certain that no Great Auks resorted thither now.

Of the third locality I have now to speak. Lying off Cape Reykjanes, the south-western point of Iceland, is a small chain of volcanic islets, commonly known as the Fuglasker, between which and the shore, notwithstanding that the water is deep, there runs a Röst (Roost), nearly always violent, and under certain conditions of wind and tide such as no boat can live in. That which is nearest the land, being about thirteen English miles distant, is called by Icelanders Eldey (Fire Island), and by the Danish sailors Meel-sækken (the Meal-sack), a name, indeed, well applied; for, seen from one direction at least, its appearance is grotesquely like that of a monstrous half-filled bag of flour, the resemblance, too, being heightened by its prevailing whitish colour. Not very far from Eldey lies a small low rock, over which it seems that the sea sometimes breaks. This is known as Eldeyjardrángr (Eldey's Attendant). Some ten or fifteen miles further out are the remains of the rock formerly known to Icelanders as the Geirfuglasker proper, and to Danes as Ladegaarden (the Barn-building), in former times the most considerable of the chain, but which, after a series of submarine disturbances, beginning on the 6th or 7th of March 1830, and continuing at intervals for about a twelvemonth, disappeared completely below the surface; so that now no part of it is visible, though it is said that its situation is occasionally revealed by breakers. Further out again, perhaps some six-and-twenty English miles from Reykjanes, rises another tall stack, called by Icelanders Geirfugladrángr, and by Danish sailors Greenadeerhuen (the Grenadier's Cap). All these rocks have been long remarkable for the furious surf which boils round them, except in the very calmest weather. Still more distant is a rock to which the names Eldeyja-bodi or Blinde-fuglasker have been applied by Icelanders. This is supposed to have risen from the sea in 1783, the year of the disastrous volcanic eruption in Skaptafells-sýsla, and soon after to have sunk beneath the waves*.

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* Of course it does not follow, even if the story be true, that this bird was *bred* there. Faber states (Prodromus der isländischen Ornithologie, Kopenhagen, 1822, p. 49), that he was on the Westman Islands in July and August 1821, and that a peasant there told him it was twenty years since a Great Auk (and that the only one of the species he had ever seen) had occurred there. He adds, that this bird and its egg, upon which it was taken, remained a long time in a warehouse on one of the islands, but had vanished before his arrival. We may, with Professor Steenstrup (*l. c.* p. 76, note), infer from this that the Gare-fowl, even about the year 1800, was a great rarity in the neighbourhood.

Icelandic records show that, at the beginning of the thirteenth century, various changes took place among the islands off Reykjanes just enumerated. It is stated that a rock, then known as Eldey, disappeared; but another being thrust up close by, the old name was transferred to the new-comer, and has since been borne by it. No notice is taken in manuscripts of that remote time of the birds found on these islands; but doubtless they were even then, weather permitting, visited by the inhabitants of the adjoining coast. Indeed, it is asserted in Wilchin's 'Máldagabók' (which dates from 1397, and has not, I believe, been printed), that half the Geirfuglasker belonged to Mary Church in Vogr, now represented by Kyrkjuvogr, and one-fourth to St. Peter's, Kyrkjubolu, of which the church at Utskála is the modern equivalent—claims which were still looked upon as extant until the submergence of the skerry put an end to them. It has been suggested that the remaining quarter was shared by the church of Staðr in Grindavík; but most likely it was left to reward the bold adventurers who resorted thither. In 1628, twelve men were drowned at the Geirfuglasker, no doubt in a fowling expedition; and in 1639* four large boats (three from Suðrnes, the district between Skagen and Osar, and one from Grindavik) proceeded thither; two of which, those from Stafnes and Marsbuðum, were lost at the skerry, while the other two, from Hvalsnes and Staðr, only returned with difficulty. It might have been some such disaster as this that prompted a metrical effusion composed by Séra Hallkiell Stephansson, the clergyman of Hvalsnes, who flourished between 1655 and 1697, of which it is feared only two lines have been preserved to posterity. In these the poet says that he has never trusted himself to Geirfuglasker, as, on account of the surf, boats were broken by the waves there. In 1694, a French vessel was wrecked on the island, but the crew landed in their boats at Miðnes.

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* I should have wished to have given, in explanation of the above description, a sketch map of these localities, but I have not the means of doing so accurately. From our own observations, Mr. Wolley and I had reason to doubt whether the bearings of these islands have been correctly laid down either in Gunnlaugsson's map or the Danish Admiralty chart.

Soon after our arrival at Reykjavik, we were pleased to learn that the public library there contained a short but beautifully written manuscript account of the Reykjanes Geirfuglasker. For a knowledge of its existence we were indebted to the kindness of Professor Konrad Maurer of Munich, well known as one of the most distinguished Icelandic scholars, and the pleasure of whose company we enjoyed during our voyage to the North, and part of our residence in the capital. The liberality also of the librarian in allowing us the free use of, and permission to copy, this curious document, must not pass unnoticed here. From the penmanship and the paper on which it is written, it is believed by good judges whom we consulted to be probably a copy. From internal evidence, which need not now be detailed, I venture to express my opinion that the original must have been composed within a few years of 1760. It commences abruptly by giving a somewhat minute description of the rock and its unquestionably volcanic origin; making, however, no reference to its neighbouring islands. It then proceeds to relate the marvellous numbers of birds found upon the rock, adding that the "Gare-fowl is there not nearly so much as men suppose;" that the space he occupies

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* There is an apparent misprint of "1439" for the above date in Professor Steenstrup's reference to this event (*l. c.* p. 83, note). The particulars mentioned in the text were supplied to us by Séra S. B. Sivertsen, the clergyman at Utskála, to whom we were indebted for many similar acts of kindness.

"cannot be reckoned at more than a sixteenth part of the skerry," and this only at the two landing-places; "further upwards he does not betake himself, on account of his flightlessness." The writer then goes on to speak of the extreme danger of landing on account of the surf, saying that to go there is to place life and death on an even chance; and after mentioning the report, which is even now current, that a successful expedition to the skerry was equally profitable with a summer's hiring of two hundred fishes' value in the north country, and citing the statement from the Máldága, to which I have before referred, concludes with Sir Hallkiell's couplet mentioned above. Besides this, there are appended two foot-notes. In the first, the writer says that in the year 1732, after a lapse of seventy-five years, the skerry was visited, and two huts, three birchen staffs about two ells long, and some withered human bones, were found thereon; adding, by way of comment, that three men had been known to have supported themselves on the rock by eating sun-dried birds, and drinking rotten eggs for half a month before they were taken off. The second note gives a very accurate description of the Gare-fowl and its peculiarities, including its eggs, which the writer describes as if he had been an enthusiastic oologist, though he considers it worthy of remark that he has "known Danes give eight to ten fishes * for an empty blown egg," the climax being the apostrophe "*Rara avis in terris*!" Not the least singular part of the manuscript is an inserted leaf, on which is drawn a very quaint sketch of the skerry. Two boats are seen, anchored with large stones, according to the Icelandic custom still prevalent. In one of these are seated three, and in the other two men, waiting the return of three comrades, who are on the rock, hunting what appear to be Gare-fowls, of which upwards of sixty are represented.

Now, it has been above stated that in 1732 expeditions to the skerry were resumed after being long discontinued, and, in connexion with this fact, it may not be amiss to observe that Anderson, some time Burgomaster of Hamburg, in his account of Iceland, remarks* on the occurrence of many Great Auks the year before the death of King Frederick IV. (of Denmark), which took place in 1730. Hereupon Niels Horrebow, whose principal object was to contradict all Anderson had said, with some reason ridicules† his predecessor's notion of that event being thus heralded, and asserts that no more birds were seen in the year mentioned than previously. But it seems to me improbable that Anderson should have no grounds for his statement, though of course I do not admit the portentous inference, and, if so, it is not unlikely that the renewal of visits to the Geirfuglasker, in 1732, may have been prompted by the report the last-named author mentions of the bird's abundance three years before. On the other hand, I am unable to connect this reported abundance with any other physical phenomenon. I do not find that the period just previous to 1729 was marked by any volcanic outbursts, or the presence of any extraordinary amount of floating ice, either of which events might be supposed to affect the bird's movements.

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* I much regret not being able to give, in explanation of this and the passage mentioned a few lines above, the worth of a *fish* at the period when I suppose this manuscript to have been written. It was, and in the secluded parts of the country still is, the unit of the Icelandic currency, but, of course, a unit of very variable value.

In 1755, Eggert Olafsen and Bjarne Povelsen, to whose accurate account of Iceland I have already alluded, explored the Gulbringu Sýsla, which comprehends the south-western corner of the island, and they passed the following winter at Viðey (*op. cit.* pp. 848, 849), during which time it is mentioned that they saw both the bird and its egg, which had been obtained from the Reykjanes skerry by some Suðnes boats (p. 983). A few years later, Mohr in his work, which I have also before mentioned, says (*op. cit.* p. 28) that he was assured by the peasants that the bird was blind when on land, a notion not entertained by the Færöese, but which still prevails in Iceland. He was also told that in former days people had filled their boats with its eggs from the Reykjanes station, and though he does not expressly say so, I think we may infer from these authorities that about the middle or towards the end of the last century this Geirfuglasker was constantly visited by fowling expeditions. Local tradition makes the same assertion, assigning the leadership of these adventurous exploits to one Svenbjorn Egilsson, born in 1700, and Hannes Erlendsson, born in 1705; but later their place was taken by one Hreidar Jónsson, whom people now living can remember as a blind pauper some eighty years of age, with a long beard. This hero was born, as it appears, in 1719, and used to go yearly to the skerry on behalf of Kort Jónsson, a rich farmer at Kyrkjubol, who flourished between 1710 and 1760. Hreidar is even reported to have made during one summer three expeditions, in which he acted as foreman. After his time the practice seems to have died out; but one witness informed us that, to the best of his recollection, people had made voyages between 1784 and 1800. Faber, who was in Iceland in 1821, and then attempted to reach the skerry (of which exploit I shall presently speak), tells us (*op. cit.* p. 48), that for a long period these perilous expeditions had been relinquished—probably because the results from repeated performance fell short of the risk incurred. But the birds were not wholly banished; for Thorwalder Oddsson, born about 1793, told us, that when he was a boy, some nine or eleven years old, he found one on the shore at Selvogr, and a few years later, probably between 1808 and 1810, two were killed at Hellirsknipa, between Skagen and Keblavik. Erlendur Guðmundsson, an old man with a most retentive memory, showed us the gun with which he shot one of them. He was in a boat with his brother-in-law, A′sgrimur Sæmonsson, who died in 1847, and the occurrence happened in the month of September. The Gare-fowls were sitting on a rock: A′sgrimur fired first, and killed one; the other took to the water, and was shot by Erlendur. They each ate their respective birds, and very good meat they found them. A third is said to have been shot a few years later, near the same spot, by one Jacob Jonsson, now dead; this also was eaten.

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* 'Herrn Johann Anderson, &c. Nachrichten von Island, Grönland und der Strasse Davis, &c.' Frankfurt u. Leipzig, 1747, p. 52.

† 'Tilforladelige Efterretninger om Island, &c.' Kjöbenhavn, 1752, pp. 175, 176.

The cause, however, of the most wholesale destruction of Great Auks in modern times must be sought elsewhere. In 1807 hostilities commenced between England and Denmark. The following year, the 'Salamine,' a privateer of twenty-two guns, under British colours, and commanded by one John Gilpin, but probably owned by Baron Hompesch, who was also on board, appeared at Thorshavn, the capital of the Færöes, which her crew almost entirely plundered, ending by carrying off a certain Peter Hansen, whom they forced to pilot them to Iceland. Arrived at Reykjavik, July 24th, 1808, they repeated their outrages, and before they finally quitted the island paid a visit to the Geirfuglasker, where they remained a whole day, killing many birds and treading down their eggs and young. After this they sailed away, August 8th, and deposited Hansen again in the Færöes. On February 7th, 1810, at the solicitation of Sir Joseph Banks, an order in council was set forth by the British Government, exempting the northern possessions of the Danish Crown from any molestation on the part of English cruisers, and permitting the inhabitants of the same to trade with either London or Leith, though not with the mother-country. The Court of Copenhagen met this act of common humanity by issuing decrees, strictly prohibiting, on pain of death, all intercourse with the British*. The consequence was, that the unfortunate Færöese were nearly reduced to a state of starvation; and in 1813, as a last resource, their Governor, Major Löbner, determined to send a vessel to Iceland to obtain some necessaries. This vessel, the schooner 'Færöe,' of twelve guns, he placed in charge of Hansen, as one already acquainted with the coast. When they came off Cape Reykjanes, they were becalmed; and a boat being lowered, a party went off to one of the skerries, on which, as their Captain expected, they found abundance of birds, and among them many Great Auks. They killed all they could, and loading the boat quite full, yet left many dead ones on the rock, intending to return for them; but the wind springing up, Hansen made sail for Reykjavik, where, about a week later, they arrived on the 29th of July, having then on board among their victims no less than twenty-four Gare-fowls, besides others which were already salted down. One of these birds is said to have been given to the Bishop (Vidalin), and by him sent to a friend in England. Mr. Wolley conversed with one of the two survivors of this voyage, Daniel Joensen, in 1849*; and on July 25th, 1858, through the kind attention of Herr Sysselmand H. Müller, we had an interview with the other, a clear-headed old man, Paul Medjord by name. The accounts of these two witnesses differ from each other in no material point; but it does not seem quite certain whether the rock on which they landed was the Geirfugladrángr or the Geirfuglasker proper. Many of the above particulars, including the exact dates, which I believe have never before been published, were most obligingly furnished us from the official records by Herr Dahlerup, the Governor of the Færöes, and Herr V. Finsen, the By-fogden of Reykjavik; but Faber, in 1822, briefly mentioned this massacre, and in 1839 the late Etatsraad Reinhardt † added some further information, which notices have been copied into various other works.

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* Journal of a Tour in Iceland in the Summer of 1809. By William Jackson Hooker, F.L.S. &c., 2nd ed. London, 1813, vol. ii. pp. 57 *et seqq.*

In 1814, according to Faber (*loc. cit.*), seven Great Auks were killed on a little skerry at Látrabjarg, on the north shore of Breidifjorðr. I do not know any other reported instance of its occurrence there or elsewhere in Iceland so far to the north. Olafsen (*op. cit.* p. 562) gives a lengthened description of the locality and the birds which frequent it, but makes no mention of *Alca impennis*. The only notice of the place I can find besides is in Mr. Metcalfe's amusing little book, just published ‡. This gentleman tells a story to show that spiteful spirits dwell in some part of the cliff, but does not suggest that they are the ghosts of departed Gare-fowls.

Faber further informs us (*op. cit.* p. 48) that on the 25th of June, 1821, he started on an excursion to the Reykjanes skerries. He was accompanied by a Danish merchant, a Swedish count, and the latter's servant §. Of the Icelanders who were on board the vessel, the 'Villingar,' a cutter belonging to one Jón Danielsson, only one survives. He, by name Olafr Pálsson, gave us an account of the voyage, closely agreeing with Faber's, which he had never seen. They came first to the Geirfuglasker, and sailed between it and the 'drángr,' where the Count, whose name I have been unable to ascertain, landed and gathered some sea-weed. Then the weather became fair, and they proceeded to the skerry itself, where they arrived in the evening. Faber remained on board, but the Count again landed, and presently fell into the water. They picked him up, and his servant shot a good many Gannets (*Sula bassana*). Later in the evening they returned, and some of them went on shore, but could find no way up. Jón Danielsson declared he was ready to stop a week; the Count, however, seemed to have had enough of it, and "Fugle Faber thought as the Count did." They were out two days and two nights at the rocks. They did not go near Eldey, saw no Gare-fowls, and their opinion was that they must have been all killed by the French sailors, as they had heard a vessel of that nation had been seen there two summers before*. Jón Jónsson, son of the owner of the 'Villingar,' then a lad about twelve years old, who assisted in putting the foreigners on board her, and had often heard his father and elder brother speak of the expedition, also corroborated Olafr Pálsson's narrative.

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* Contributions to Ornithology, 1850, [edited] by Sir William Jardine, Bart., &c. Edinburgh, 1850, p. 116.

† Kröyer's Naturhistorisk Tidsskrift, i. p. 533.

‡ The Oxonian in Iceland, &c. By the Rev. Frederick Metcalfe, M.A., &c. London, 1861, p. 260.

§ I am not so fortunate as to possess a copy of Faber's other work, 'Ueber das Leben der hochnordischen Vögel' (Leipzig, 1825); nor have I seen the paper in the 'Isis' for 1827 (p. 633), in the latter of which I am informed he gives the fullest particulars of his expedition; I therefore

It is clear, however, that at this very time there were Great Auks in the neighbourhood; for, a few days later in the season, two birds were seen sitting on a low rock, close to the place where I have before mentioned that two or three were shot, and were killed with a sprit or gaff by another Jón Jónsson (now

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have to content myself with the translated extracts therefrom contained in a paper "On the Great Auk," communicated May 19, 1859, by Dr. Edward Charlton to the Tyneside Naturalists' Field Club, and published in their 'Transactions,' vol. iv. pp. 113 *et seqq.* This paper has also been reprinted in the 'Zoologist' for 1860, p. 6883.

* It does not seem to me at all impossible that there should be some truth in this report. Mr. Scales has kindly informed me that he obtained the fine Great Auk's egg, now in his possession, from M. Dufresne, who had one or two others in his collection, in 1816 or 1817. It was said to have come from the Orkneys, which, however, I think is extremely unlikely.

dead) and his son Sigurðr, who related the circumstance to us. This witness is certain that it was about the beginning of July of the same year as that of Faber's visit. They sold the skins, which our informant himself took off, commencing the operation by making a hole transversely across between the legs, as he would do in the case of a quadruped. They afterwards ate the bodies, and sold the skins to the A'sgrimur before mentioned*. The occurrence of so many examples of this bird nearly in the same locality may perhaps be accounted for by the fact that the tide runs in very strongly round Skagen, and sets along Holmsberg†. The Auks, after fishing on that side of the promontory, may have found themselves unable to make head against the current, and so have betaken themselves to the shore.

I may here observe that we failed to gather any further information respecting a bird said by Dr. Kjærbölling (Danmark's Fugle, p. 415) to have been killed in 1818 on a place in South Iceland, where many had been observed; but Etatsraad Reinhardt records (*loc. cit.*) the death of one in 1828, and I think the Doctor is altogether mistaken in the assertion that "Apothecary Mechlenburg of Flensborg possesses a pair which were killed on the Gare-fowl skerries in 1829, where they were courageously defending their two eggs." But of this last supposed capture I shall say more presently.

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* The Icelandic skins of Foxes (*Canis lagopus*) are all flayed in the way above described. I cannot help suggesting that these may have been the two Great Auks' skins stated by the late Etatsraad Reinhardt (*loc. cit.*) as being received in 1823 from Oerebakke (Eyrarbakki), though they were said to have been killed there in that year by a boy with a stick. Faber, when in the district, lived for some weeks in A'sgrimur's house, who was probably thus aware that he wanted them. On leaving it he went in the direction of Eyrarbakki, on July 9th he was five miles to the east of Keblavik, and in the end of that month and in the next was on the Westman Islands (Prodr. pp. 38 & 49). Some persons we saw declared that he had three specimens, but he himself says somewhere (I think in the 'Isis') that he never procured any of this species. Possibly, therefore, they were sent after him to Eyrarbakki, and thence some two years afterwards to the Museum at Copenhagen.

† We obtained information respecting the tides from a manuscript account of Gulbringe-sýsla, written about 1784, by the then Land-foged Skule Magnusen, which was kindly lent to Mr. Wolley, and the account was confirmed by the statements made to us by fishermen.

We now come to the most modern period in the Great Auk's history. In 1830, as I have before said, the Geirfuglasker off Reykjanes disappeared beneath the waves. Whatever motive prompted him, it is certain that in that year one Brandur Guðmundsson, an inhabitant of Kyrkjuvogr, who died in 1845, bethought him of making an expedition to Eldey, or the Meal-sack, the high rock which stands between the sunken island and the Cape. All the dwellers in the district concur in saying that before that time no rumour of the birds breeding there had ever reached them. It seems that in that year he led two voyages to this new-found locality, in one of which twelve or thirteen, and in the other eight examples were captured. Six of these were purchased by Adnor Gunnarsson, and as many more by Holgeir Jacobæus, two merchants living at Keblavik, while the remainder are unaccounted for. On the first occasion the weather was fine, and all the party but two landed. Besides the Gare-fowls they took a great many other birds, Razor-bills and Guillemots. The second time the weather was bad, and only four men went up. They had to come away very quickly. These and many other particulars of interest which I could give, were I not afraid of extending these notes to an unreasonable length, were related to us by two men (brothers), Stephan and Jón Gunnarsson, the only survivors of those who were present. The following year another voyage was undertaken by the same foreman, and whether that the birds were more numerous, or that their persecutors had learned experience (for on the previous occasions several had escaped), twenty-four were captured, of which one was brought off alive, and so taken to Keblavik, where, however, it was killed, or at least died. These two dozen Gare-fowls were all skinned by one person, a woman, Sigrida Thorlaksdotter, who told us that she performed the operation in her accustomed way, opening them under the right wing, and stuffing the skins with fine hay. The same merchants as before, with the addition of Dethlef Thomsen, shared them. It is not very easy for me to reconcile the various conflicting statements about the captures of the next two years, but in 1833, thirteen birds were probably taken, and in 1834, nine birds, with eight eggs, seem to have been obtained, of which one bird was given to the Crown Prince (the present King of Denmark), who then happened to be in Iceland, and subsequently passed into the possession of the late Herr Mechlenburg. The remaining eight were purchased by Herr Thomsen, just mentioned, whose son most obligingly showed Mr. Wolley an account of the transaction in his father's books. They were skinned by Madame Thomsen and her sister, Jomfrue A. C. Lewer, who informed us that they were opened under the wing, and the skins stuffed with hay, the bones being wrapped round with hemp. The eggs were quite fresh, and were blown by the two ladies. All these specimens were disposed of to Herr De Liagre, a dealer at Hamburg, and, I may add, I think that one of the eggs now in my possession belonged to this lot. In August 1840 or 1841, three skins, as many eggs, and the body of a bird in spirit were bought of Factor Chr. Thaæ, now living at Copenhagen, by Herr S. Jacobsen, who told us that he parted with them either to Herr Selning, a naturalist at Hamburg, or to Mr. Jamrach, the well-known dealer. Two of these birds, or else two more some other year, were obtained by one Stephan Sveinsson of Kalmanstjorn, whom the good people of Kyrkjuvogr seem to look upon as a kind of poacher on what they consider their rightful domain. Certain it is that on one occasion Herr Thaæ bought two birds of this Stephan, as the latter informed us, but the exact date is not so clear.

The last Gare-fowls known to have occurred in Iceland were two in number, caught and killed in 1844 by a party, of which our excellent host at Kyrkjuvogr, Vilhjálmur Hákonarsson, was the leader. They were bought, singularly enough, by Herr Christian Hansen, son of that Hansen I have before alluded to as having been (though, in the first instance, against his will) so dread a scourge to the race. From him they passed to Herr Müller, then the apothecary at Reykjavik, who, previously to having them skinned, prevailed upon M. Vivien (a French artist) to paint a picture of one of the dead birds, which picture now hangs in the house of his successor, Herr Randrup, the present apothecary in the capital of Iceland. As many persons may regard these birds as the latest survivors of their species, I may perhaps be excused for relating at some length the particulars of their capture, the more so as this will serve to explain the manner followed on former occasions.

The party consisted of fourteen men: two of these are dead, but with all the remaining twelve we conversed. They were commanded, as I have just said, by Vilhjálmur, and started in an eight-oared boat from Kyrkjuvogr, one evening between the 2nd and 5th of June, 1844. The next morning early they arrived off Eldey. In form the island is a precipitous stack, perpendicular nearly all round. The most lofty part has been variously estimated to be from fifty to seventy fathoms in height; but on the opposite side a shelf (generally known as the "Underland") slopes up from the sea to a considerable elevation, until it is terminated abruptly by the steep cliff of the higher portion. At the foot of this inclined plane is the only landing-place; and further up, out of the reach of the waves, is the spot where the Gare-fowls had their home. In this expedition but three men ascended: Jón Brandsson, a son of the former leader, who had several times before visited the rock, with Sigurðr Islefsson and Ketil Ketilsson. A fourth, who was called upon to assist, refused, so dangerous did the landing seem. As the men I have named clambered up, they saw two Gare-fowls sitting among the numberless other rock-birds (*Uria troile* and *Alca torda*), and at once gave chase. The Gare-fowls showed not the slightest disposition to repel the invaders, but immediately ran along under the high cliff, their heads erect, their little wings somewhat extended. They uttered no cry of alarm, and moved, with their short steps, about as quickly as a man could walk. Jón with outstretched arms drove one into a corner, where he soon had it fast. Sigurðr and Ketil pursued the second, and the former seized it close to the edge of the rock, here risen to a precipice some fathoms high, the water being directly below it. Ketil then returned to the sloping shelf whence the birds had started, and saw an egg lying on the lava slab, which he knew to be a Gare-fowl's. He took it up, but finding it was broken, put it down again. Whether there was not also another egg is uncertain. All this took place in much less time than it takes to tell it. They hurried down again, for the wind was rising. The birds were strangled and cast into the boat, and the two younger men followed. Old Jón, however, hesitated about getting in, until his foreman threatened to lay hold of him with the boat-hook; at last a rope was thrown to him, and he was pulled in through the surf. It was "such Satan's weather," they said, but once clear of the breakers they were all right, and reached home in safety. Next day Vilhjálmur started with the birds for Reykjavik to take them to Herr Carl F. Siemsen, at whose instance this particular expedition had been undertaken; but on the way he met Hansen, to whom he sold them for eighty Rigsbank-dollars (about £9). According to Professor Steenstrup (*op. cit.* p. 78), the bodies are now preserved in spirit in the Museum of the University of Copenhagen, but respecting the ultimate fate of the skins I am not quite sure.

Several other expeditions besides those to which I have here adverted no doubt took place between the years 1830 and 1844, but I cannot at present give either the dates or the results. Herr Siemsen informed Mr. Wolley that twenty-one birds and nine eggs had passed through his hands; but this account contains other details which are certainly inaccurate. If all the stories we received can be credited, the whole number would reach eighty-seven. I should imagine sixty to be about the real amount. Of these a large portion went to the Royal Museum at Copenhagen, as is stated by the late Etatsraad Reinhardt (*loc. cit.*); a good many more passed into the hands of Herr Brandt, whose son informed Mr. Wolley that, in or since the year 1835, his father had had nine eggs, and I suppose birds to match. Two eggs were also purchased by a certain Snorri Sæmonasson then living at Keblavik, but what became of them I do not know. I have also learnt, on undoubted authority, that the late Herr Mechlenburg has had in all eight birds and three eggs*. From this naturalist, in April 1844, Mr. John Hancock, by the intervention of Mr. John Sewell of Newcastle, received a bird and an egg, which are now in his collection, with the information that they were taken together with another bird and another egg, a year or two previously, on an island "at the *north-east* side of Iceland." A wrong locality was probably furnished on purpose to mislead Herr Mechlenburg; but the fact of his never having had more than three eggs, of which two came into his possession in, or shortly before the year 1844, entirely disposes of Dr. Kjærbölling's assertion to which I have before alluded*. Thus it is pretty evident that most of the specimens of the Great Auk and its eggs, which now exist in collections, were obtained from Eldey between the years 1830 and 1844†.

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* Herr Pastor W. Pässler has some remarks on these in the 'Journal für Ornithologie,' 1860, p. 59.

From what has been already stated, it will be seen how great Mr. Wolley's industry in collecting information was; yet I must add a few more words. In former days, the Gare-fowls were, in summer time, so constantly observed in the sea by the fishermen, that their appearance was thought but little of. The people from Kyrkjuvogr and Suðrnes used to begin to see them when they arrived off Hafnaberg, and from thence to Reykjanes-röst. We were told by many people that they swam with their heads much lifted up, but their necks drawn in; they never tried to flap along the water, but dived as soon as alarmed. On the rocks they sat more upright than either Guillemots or Razor-bills, and their station was further removed from the sea. They were easily frightened by noise, but not by what they saw. They sometimes uttered a few low croaks. They have never been known to defend their eggs, but would bite fiercely if they had the chance when caught. They walk or run with little, short steps, and go straight like a man. One has been known to drop down some two fathoms off the rock into the water. Finally, I may add that the colour of the inside of their mouths is said to have been yellow, as in the allied species.

In 1846 Eldey was visited by Vilhjálmur and a party, and no Gare-fowls could be found. In 1858 Mr. Wolley and I remained at Kyrkjuvogr, with two short intervals, from May 21st to July 14th. Our chief object was to reach not only Eldey, but the still more distant Geirfugladrángr, on which, probably, no man has set foot since the Swedish Count, in 1821, with so much difficulty reached it. Boats and men were engaged, and stores for the trip laid in; but not a single opportunity occurred when a landing would have been practicable. I may say that it was with heavy hearts we witnessed the season wearing away without giving us the wished-for chance. The following summer was equally tempestuous, and no voyage could be attempted. Last year (1860), on the 13th of June, Vilhjálmur successfully landed on Eldey, but he found no trace of a Great Auk, and the weather prevented his proceeding to the outer island. Later in the year a report reached Copenhagen, which was subsequently published in the newspaper 'Flyveposten' (No. 273), to the effect that two eggs of this bird had been taken on one of the skerries and sold in England for fabulous prices. Through the kind interest of several friends, I think I am in a position to assert that the statement is utterly false. The last accounts I have received from Iceland, under date of June the 20th in the present year (1861), make no mention of any expedition this summer. I am not very sanguine of a successful result, but I trust yet to be the means of ascertaining whether, at the sinking of the true Geirfuglasker, some of the colony, deprived of their wonted haunt, may not have shifted their quarters to the Geirfugladrángr, as others, we presume, did to Eldey, and to this end I have taken and shall continue to take the necessary steps.

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* The additions which, in the last edition of his work, Mr. Yarrell made to his account of this bird (B. B. 3rd ed. vol. iii. pp. 482-3), are copied from Mr. Lloyd's 'Scandinavian Adventures' (ii. pp. 496–7), having been originally taken from Dr. Kjærbölling's book, and are very inaccurate.

† Lists of these, which are in the main correct, though I know of a few that are omitted, have lately appeared in the 'Zoologist' for the present year (pp. 7353 & 7386), and almost simultaneously in the 'Field' newspaper (Nos. 423 & 424, pp. 93, 114). Further remarks on them will be found in the former journal (pp. 7387 & 7438).

But to sum up the account of Mr. Wolley's personal researches. The very day after our arrival at Kyrkjuvogr he picked up from a heap of blown sand, two or three birds' wing-bones (*humeri*)*. He was at once struck with their likeness to the figure illustrating Professor Steenstrup's paper—that valuable paper to which I first of all referred, and which has been constantly at my side while compiling this abstract of Mr. Wolley's notes. A little comparison, not only with the engraving, but with the corresponding bones in other species, a good supply of which there was no difficulty in procuring, soon showed that he had not been mistaken, and accordingly bone-seeking became one of our recognized occupations. Yet I cannot say that even here we were very successful; curiously enough where the chances seemed the best we never found anything. Thus the old Geirfuglasker having formerly been shared by the churches of Kyrkjubol and Mariu-Kyrkja-i-Vogi, we naturally thought that the "Kjökken-möddinger" (Kitchen-middens) at those places would be likely to yield the best supply. Yet at what we were told was the site of the latter not a vestige of a bone could be found. The ground was covered everywhere with great stones—the little soil there was between them seeming as if it had drifted into its present position, while the sea may have completely washed away the rubbish-heaps, if houses ever stood there. At the former place—Gammall Kyrkjubol—though there was a very large grass-grown mound entirely composed of ancient refuse, and into which we made a deep excavation, we did not recover a single fragment of a Great Auk—scarcely, I think, of any bird—from it. Nor was our luck much better at Stafnes, where we dug down through a large heap, coming upon fishes' bones in great abundance, but little of interest excepting a stratum of broken egg-shells, apparently those of Guillemots and Razor-bills, with perhaps a few Eider Ducks', though I have not yet examined them very closely. It was remarkable that such of the fragments as had any markings retain them still, after so long a burial, quite as brightly as specimens I have often seen in cabinets, when the collector has not been careful to exclude air and light. At Kyrkjuvogr we were more fortunate; in the wall of the churchyard we found two or three Great Auks' bones sticking in the turf, which is used instead of mortar to keep the stones in their places. On inquiry the turf was found to have been cut from a small hillock close by. This we pretty thoroughly searched, and among a vast number of the bones of other *Alcidæ,* there were several of the large species.

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* They were from the side of a channel blown out by the wind from a heap formerly drifted there, such as in the eastern counties of England would be called a "Sand-gall."

But our most profitable digging was at Bæjasker. Mr. Wolley one day as he was riding along called out to me that he saw two Gare-fowls' bones lying on the ground. On getting off his horse he found them to be the distal ends of the *humeri,* and apparently a pair. Going to the spot, I picked up a *radius,* also of a Gare-fowl, the first we had found anywhere. We carefully examined the locality on two other occasions, and found remains which must have belonged to at least eight individual birds. Many of them bore marks of the knife, and nearly all were in good preservation. They were chiefly lying under stones, which seemed once to have formed an old boundary-wall, and had probably been contained in the turf from some still more ancient rubbish-heap with which the wall had been built up. Just on this spot the sea appears to have encroached, and in this manner laid bare the two bones whose discovery led to the detection of the rest. Among the specimens we collected there are several in which certain differences, probably the result of age or sex, are observable. I do not intend to describe them now. I will merely remark that the Great Auk is rendered incapable of flight by the modification of the extremities only of its wings. While its *humerus* is in proportion with the bulk of the body, and fully twice the length that it is in the Razorbill, the *ulna, radius,* and *metacarpus* are nearly the same length in both species, only much thickened in the Gare-fowl *.

It will be gathered from what has been above said that I think there is yet a chance of the Great Auk still existing in Iceland. At all events until it is proved that he is not to be found on the Geirfugladrángr, I think he must not be despaired of; but I know of no other locality where he is likely to be. The numerous islets in the Breida-fjorðr which have been suggested as affording him possibly a last station, are, I believe, visited every year by people from the neighbourhood. Those who imagine he may be on the opposite coast of Greenland are,

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* Mr. Edward Blyth gives a few interesting particulars about some bones of *Alca impennis* in the 'Proceedings' of the Zoological Society for 1837 (p. 122). I think it is likely enough that the specimens he examined were extracted from the skins prepared in 1834 by Jomfrue Lewer, which I have mentioned. At all events, that lady seems to have left more of the bones in the skins she prepared than is the custom with other performers in Iceland.

I am sure, doomed to disappointment. That shore is almost always beset with ice, and dive admirably as the bird may, I have yet to learn that he can remain under water as long as a Seal or a Walrus. His then would be a poor sort of existence among closely-packed floes and crashing mountains of ice. Along the coast of Labrador nothing has been lately heard of him that I know of, and yet, if I am rightly informed, it is pretty generally every year visited by fishermen of various nations. The formerly known breeding-places in the Gulf of St. Lawrence and off the coast of Newfoundland are ascertained to be abandoned, and no wonder when we think of the annual massacres which used to be committed there*. Yet there may be still "some happier island in the watery waste" to which the Penguins of the western seas may have escaped; but then, we may rely upon it, there is left a scanty remnant only.

I have been informed by my good friend Colonel Drummond-Hay, that in December 1852, in passing over the tail of the Newfoundland banks, he saw what he fully believes to have been a Great Auk. At first he thought it was a Northern Diver; but he could see the large bill and white patches, which left no doubt on his mind. The bird dived within thirty or forty yards of the steamer. The same gentleman also has sent me a letter received by him in 1854 from the late Mr. J. MacGregor, of St. John's, Newfoundland, in which he encloses a succinct account of the former wanton destruction of these birds by the fishermen —the heaps of bones and the 'pounds' now to be seen on some of their old breeding-places—and states that in the preceding year (1853) a dead one was picked up in Trinity Bay. My inquiries about this specimen have not yet resulted in obtaining any further information respecting it *.

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* I am under the necessity of dissenting from the opinion expressed by Professor Owen, in a lecture delivered at the Royal Institution, April 12, 1859, and repeated in his article on 'Palæontology,' as republished in a separate form from the 'Encyclopædia Britannica' (p. 400). To the destruction which the Great Auk has experienced at the hands of man, must, I am confident, its gradually increasing scarcity be attributed. Granting that it does require very peculiar breeding-places to be fit and favourable for it, we only know of the disappearance of one such in the whole extent of its range, which in comparatively modern times reached from Cape Cod to Papa Westra, while on every other known breeding-place it has, from the earliest date, been the especial object of search.

I am well aware that nothing but the extraordinary interest that attaches to this bird warrants me in occupying so much space. It must be remembered that it is not merely a matter with which ornithologists only are concerned, but is one of far higher and more general importance. "A consideration of such instances of modern partial or total extinctions," says Professor Owen (*loc. cit.*) in reference to this very case, "may best throw light on, and suggest the truest notions of, the causes of ancient extinctions." If this be not sufficient excuse for me, I must urge the great difficulty I have had in condensing the numerous particulars of information which Mr. Wolley's labours have placed at my disposal. It would have been far easier to have been more diffuse. In Iceland all, with but one exception, were eager to tell us all they knew, and that in the most careful manner. I have already mentioned several persons from whom we obtained valuable intelligence, and unjust as it may appear to the rest, I must forbear from naming more. The chief authorities both in church and state afforded us every facility, and all orders and degrees of men and women followed their example. From the Governor surrounded by the comforts of modern civilization through every grade to the unhappy leper, dwelling, as his ancestors may have done centuries ago, amid filth and scarcity, we received an amount of attention, of which it is difficult to express the full value without seeming guilty of exaggeration. Alas that it is left to me only to make this statement! To all those concerned, then, I have to return our acknowledgments, and to no one more than to our honest and intelligent guide and interpreter Geir Zoega of Reykjavik, who for more than two months was our constant and willing attendant.

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* While on the subject of the bird's occurrence in this part of the world, I wish to remark on Mr. Cassin's statement in Prof. Baird's 'Birds of America' (p. 901), touching the Great Auk "figured by Mr. Audubon, and *obtained by him on the banks of Newfoundland*," &c. Now in 1857 I was assured by Mr. Bell, the well-known taxidermist at New York, who knew Mr. Audubon intimately, that he never possessed but one specimen of this bird; and if we turn to Prof. MacGillivray's 'History of British Birds' (vol. v. p. 359), we find him saying that he never saw but two examples of the species, one in the British Museum, and "the other belonging to Mr. Audubon, and *procured by him in London*." I have also to set right a mistake made on this side of the water. In their Catalogue of Norfolk and Suffolk Birds, printed in the 'Linnean Transactions' (xv. p. 61), Messrs. Shepherd and Whitear say, they had been told by Sir William Hooker that a Great Auk had been "killed near Southwold" in the latter county. That eminent botanist, however, has most kindly informed me that not only has he no recollection of any such occurrence, but, having taken some trouble to inquire about it, he is satisfied that the statement originated in error. I must add further, that the reported instance of a bird taken near Marlow in Buckinghamshire, on the estate of Sir William Clayton, first published, I think, by Dr. Fleming (Brit. Anim. p. 130), on Mr. Bullock's authority, seems to me very unlikely. On the other hand, I may mention that Sir William Milner tells me that within the last few years he has become possessed of a fine Great Auk, which he has reason to believe was killed in the Hebrides. This bird, I am informed, was found to have been stuffed with turf.

Whether the Gare-fowl be already extirpated or still existing in some unknown spot, it is clear that its extinction, if not already accomplished, must speedily follow on its rediscovery. I have therefore to beseech all who may be connected with the matter to do their utmost that such rediscovery should be turned to the best account. If in this point we neglect our opportunities, future naturalists will justly reproach us. The mere possession of a few skins or eggs, more or less, is as nothing. Our science demands something else—that we shall transmit to posterity a less perishable inheritance. I have to urge, in no spirit of partiality, but purely in the cause of knowledge, the claims of our own country in this event. Our metropolis possesses the best-stocked vivarium in the world. An artist residing among us is unquestionably the most skilful animal draughtsman of this or any other period. By common consent the greatest comparative anatomist of the day is the naturalist who superintends the nation's zoological collection. Surely no more fitting repository for the very last of the Great Auks could be found than the Gardens of the Zoological Society of London, where living they would be immortalized by Mr. Wolf's pencil, and dead be embalmed in a memoir by Professor Owen's pen.

Elveden, August 8, 1861.

XLIII.—*Recent Ornithological Publications.*

1. ENGLISH PUBLICATIONS.

WE have been much pleased with Mr. Atkinson's little work on "British Birds' Nests and Eggs*." It is essentially a 'Boy's own book,' and well intended to train up a youthful oologist in the way he should go. The author has been a life-long observer of a good school, and this is nearly sufficient for his purpose. It is, therefore, of comparatively little moment to his readers that, when he quotes from other works, his information is sometimes defective. Mr. Atkinson makes no show of learned acquirements, but he is far above the common run of popular writers, to whom a Latin name is an abomination. After a few judicious remarks on the necessity of, and the vulgar objections to, anything like scientific terminology, he observes well enough (p. 4), "No one was ever the worse for learning habits of orderly and systematic arrangement, even though he had to pay the price of doing a little puzzling headachy work, and had to bother himself with a good many ugly-looking, ill-sounding, jaw-cracking words." The illustrations are quite as good as could have been expected for the price, but being only woodcuts are not extremely characteristic. The printing we hope may be improved in a future edition, when a little more care may well be bestowed in hunting up later authorities than those cited.

2. FRENCH PUBLICATIONS.

It is only lately that we have succeeded in seeing a copy of M. Morelet's work on the Natural History of the Azores†, which is of much interest, as containing the first and only detailed account that has as yet been given of the zoology of this little-known group of islands. True it is they have been visited by several travellers, who have placed on record various facts of greater or less interest concerning their geology and botany; but hardly any one, except Mr. Darwin (who touched at Terceira in the "Beagle"), and Dr. Tams and Dr. Albers, who subsequently collected a certain number of mollusks in these islands at two different epochs, has even alluded to their zoology. M. Arthur Morelet, already well known to science for his labours in conchology, and for the collections in other branches of natural history with which he has enriched the French National Museum in the Jardin des Plantes, visited the Azores in 1857, in company with M. Drouet, with the object of studying the Malacological fauna of the Archipelago, and passed six months in this occupation. The volume now published contains the results of their investigations into this branch of zoology, and at the same time gives a general sketch of the whole fauna, though M. Morelet acknowledges with regret that they did not pay much attention to other objects besides those to which they particularly devoted themselves.

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* British Birds' Nests and Eggs, popularly described. By the Rev. J. C. Atkinson, &c. Illustrated by W. S. Coleman. London: Routledge & Co., 1861. Post 8vo. pp. 120. Price *One Shilling*!

† Notice sur l'Histoire Naturelle des Açores, suivie d'une description des Mollusques terrestres de cet Archipel, par Arthur Morelet. 1 vol. 8vo. Paris, 1860.

It is well known that when the Azores, so named from the abundance of hawks (*Açores*, Latinè *Astures*) met with upon them when first visited, were occupied by the Portuguese in the sixteenth century, these islands did not possess any human inhabitants. What is still more surprising, is that, with the exception of birds, they were also destitute of any species of vertebrated animal, and that at the present moment the only indigenous mammal is a species of Bat (*Vespertilio leisleri*), probably imported from the North of Europe. The Avi-fauna of the Azores embraces, according to M. Morelet, about 30 species of residents and regular visitors, which are all strictly of the European type. The Woodcock (*Scolopax rusticola*), the Red Partridge (*Caccabis rufa*), the Quail (*Coturnix dactylisonans*), the Wood Pigeon, and certain Water-fowl, are common, and render to the islanders an abundant supply of game in the season. The other birds are mostly, as far as M. Morelet can tell us, of common and well-known species; though, singularly enough, the only two of which, as we believe, M. Morelet brought home examples, are of great interest, being, one, a new species of true Finch (*Fringilla moreleti*), and the other the larger European Bullfinch, named by M. de Selys *Pyrrhula coccinea*. We have already* noticed Dr. Pucheran's notes on these two species, which have been published in the 'Revue et Magasin de Zoologie.' But we wish to urge the prosecution of a further investigation of the zoology of the Azores, and of an accurate comparison of specimens of the resident species with their European correspondents, as it is far from improbable that other instances may be found of specific or quasi-specific differences between them and the present inhabitants of the adjoining continent.

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* Ibis, 1859, p. 322, et 1860, p. 93.

3. German Publications.

We owe apologies to our readers as well as to the author for not having already redeemed our promise of giving some notice of Dr. Hartlaub's elaborate account of the Ornithology of Madagascar and the adjacent islands*, as it has been now issued in its complete and amended form.

"Naturalists," says Dr. Hartlaub, in his introduction to this work, "as well botanists as zoologists, have been long accustomed to consider Madagascar as a land of wonders and promise. The genera *Ouvirandra, Ravenalia*, and *Angræcum* of the former are rivalled by the anomalous forms *Chiromys, Eupleres, Euryceros, Mesites*, and *Atelornis* of the latter. Indeed the peculiarity of the animals that people this island, considered in relation to its geographical extent, is so great that we cannot be surprised when Isidore Geoffroy St.-Hilaire looks upon it, in respect of the idiosyncrasy of its fauna, as a fifth continent, and Hombron declares it to be one of the centres of creation of the African plateau. We are now aware that, out of about 50 species of mammals known to us from Madagascar, one or two only are met with also in Africa, and that of the 203 birds, of which the following work will make mention, not less than 97 are to be treated of as exclusively confined to the island."

Flacourt, in his 'Histoire de la grande isle Madagascar,' published at Paris in 1661, is the first author who treats of the birds of Madagascar, and gives us a list of 60 species said to be found there, the greater number of which, however, being unaccompanied by descriptions, are now irrecognizable. On the other hand, the worthy Brisson's descriptions of the 38 species of birds from Madagascar, principally taken from specimens sent by Poivre to the Reaumurian collection, are, as is always the case with that author, very full and complete, and may be relied upon as indicating valid species, though some of them have not been found again up to the present time. Sonnerat, in his 'Voyage à la Chine,' Desjardins in the 'Proceedings' of the Société d'Hist. Nat. de l'isle Maurice, and Dr. A. Smith in the 'South-African Quarterly Journal,' were the next succeeding contributors to the ornithology of Madagascar, but none of them to any very great extent. But about twenty-five years ago a new and happier era for our knowledge of this ornithology began with the labours of several French travellers and savants. Victor Sganzin, at one time Commandant of the French island of St. Marie, on the eastern coast of Madagascar, who has published his notes on the mammals and birds observed during his residence there, in the Memoirs of the N. H. Society of Strasburg, was one of the earliest of these. Bernier, Goudot, and Rousseau, three well-known names among those of the Naturaliste-voyageurs who have contributed so largely to the enrichment of the French National Collection, succeeded Sganzin in his explorations. Their many brilliant discoveries have been made known to the world by the scientific labours of I. Geoffroy St.-Hilaire, de Lafresnaye, and Pucheran. In 1848 Dr. Hartlaub turned his special attention towards the ornithology of Madagascar, and published a complete *résumé* of what was then known on the subject in the first volume of D'Alton and Burmeister's 'Zeitung für Zoologie.' As it will be observed that Dr. Hartlaub has in his present work nearly doubled his list of species, it will be evident that our knowledge of this peculiar fauna has been considerably increased since that period. This has been effected partly by the labours of the Austrian botanist Bojer and Madame Ida Pfeiffer, whose specimens have been deposited in the Vienna Museum, and critically examined for Dr. Hartlaub's work by A. v. Pelzeln, partly by small collections made by William Jardine (son of Sir William Jardine) at Bojanna Bay, and by Prof. Peters at St. Augustin's Bay, and partly by closer investigations of the Museums of Paris, Vienna, Leyden,

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* Ornithologischer Beitrag zur Fauna Madagascar's, mit Berücksichtigung der Inseln Mayotta, Nossi-be und S. Marie, so wie der Mascarenen und Seychellen, von Dr. G. Hartlaub. 1 vol. 8vo. Bremen, 1861, 88 pp.

Stuttgardt, and Philadelphia, which have been made by Dr. Hartlaub himself, with the assistance of Jules Verreaux, v. Pelzeln, Schlegel, Krauss, Heuglin, and Cassin.

We have already noticed the fact, that out of the 203 Madagascar birds enumerated by Dr. Hartlaub, 97 are exclusively confined to the island. The eccentricity of this fauna is, however, still further demonstrated by the fact that no less than 29 of the genera to which these birds are referable are also forms purely Madagascarian, and not met with in the adjoining continent or elsewhere. Some of these genera, it is true, may be said to be founded upon slight peculiarities; but others, such as *Brachypteracias, Atelornis, Falculia, Philepitta, Oriolia, Euryceros, Mesites*, &c., are possessed of such ambiguous characters that their position in the natural series is still in many cases unsettled. That Madagascar has something in common with Africa may be inferred from the fact that 42 of its species of birds also occur on the mainland of the continent. But, on the other hand, Dr. Hartlaub points out that the families *Musophagidæ, Lamprotornithidæ, Buphagidæ, Bucerotidæ*, and others, besides many genera which are especially characteristic of African ornithology, are not met with in Madagascar. With regard to the views of Geoffroy St.-Hilaire and Pucheran, that this fauna has something in common with India, Dr. Hartlaub remarks on the occurrence in Madagascar of *Ninox, Ploceus, Copsychus*, and *Hypsipetes*, as well as of several well-known Indian species. But it has always remained a doubtful point to us, whether the presence of *some* of these may not be attributable to introduction by man's agency or some other means.

After giving this imperfect account of the many interesting statements contained in Dr. Hartlaub's introduction to his little book, we have only to say, in conclusion, that the Synopsis of species is worked out in our author's usual accurate and painstaking style, and forms a worthy companion to his well-known volume on the Birds of Western Africa. Short but well-drawn diagnoses are given of all the birds peculiar to the island, as also ample synonymy and references, and, in fact, every particular which such a handbook of the ornithology of a local district ought to embrace. We sincerely hope this may not be the last local Avi-fauna which Dr. Hartlaub may treat in a similar manner.

A continuation of the third part of "Museum Heineanum," by Dr. Cabanis and Herr F. Heine, jun., lately issued, for an early copy of which we are much indebted to Herr Heine, completes the enumeration of the *Strisores* in this fine collection, and contains a portion of the Index of genera and species.

The eighth 'Lieferung' of Dr. Reichenbach's 'Handbuch der Speciellen Ornithologie' completes his account of the COLUMBARIÆ—a group composed of *Columbæ,* the family *Cracidæ* (of the order *Gallinæ*), and the *Cariamas* (belonging to the *Grallæ*), according to Dr. Reichenbach's fantastical arrangement.

The plates issued herewith form a continuation of the series of illustrations of the *Trochilidæ,* a portion of which was published some time ago. The work, as far as it is a compilation, is sometimes useful, as one of reference, but we cannot conscientiously say much in favour of such portions of it as are founded upon original research.

Besides the account of the new Cassowary, to which we have already alluded (*anteà,* p. 312), the first number of the 'Journal für Ornithologie' for the present year (the last we have received) contains an article on the breeding of the Nutcracker by Baron Richard König-Warthausen, which will be interesting to many of our readers. The author seems to think it a well-ascertained fact that this bird breeds regularly in the Black Forest *, though he has not yet been able to get authentic eggs from this locality in spite of many efforts. Baldamus states that it breeds in Transylvania; but the only egg brought back by him from his expedition into that country proves, according to Baron König-Warthausen, to be that of a Jay (*Garrulus glandarius*). Abbé Caire, however, has obtained eggs of the Nutcracker in the French Alps, "*of undoubted authenticity,*" of which the Baron has compared together six examples—four belonging to his own collection, two to Dr. Baldamus, and one to Herr Bädeker. The latter specimen has already been described and figured by Herr Bädeker in the 'Journal für Ornithologie' (1856, p. 32, pl. 1). While on this subject, it may be remarked, that we cannot believe that any active Englishman going early enough to Switzerland would have much difficulty in obtaining eggs of this bird. We have never failed to see it in abundance during our somewhat frequent visits to the higher Alps (for example, in the upper valley of Lauterbrünnen, and on the Riffelberg near Zermatt), and we have been assured by the Swiss guides that it breeds there every spring, nesting in the Arven-trees (*Pinus cembra*). In these localities it is so much devoted to the cones of this Pine as to have obtained the name of "Arven-vogel."

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* See Landbek's Systematische Aufzahlung der Vögel Würtemburg's, p. 19.

4. American Publications.

Mr. G. N. Lawrence has kindly furnished us with copies of two ornithological communications to the Lyceum of Natural History of New York, which have been reprinted from their 'Annals.'

The first is a Catalogue of Birds collected along the Panama-Railway route by Mr. McLeannan. It enumerates 142 species, amongst which are several described as new. The occurrence of a Barbet (*Capito*) so far north has not been previously recorded, and we hail with pleasure the acquisition of a new and apparently brilliant addition to the genus. Several species are also noted that have been lately described by Mr. Cassin in his account of the birds collected during the Darien expedition by Lieut. Michler. Mr. Lawrence having kindly offered to send us a series of the species, as here described, for examination, we hope to be able to give some further remarks on receipt of the specimens. Taking this collection in connexion with that of the Darien expedition and Dr. Hoffman's collections in Costa Rica, which are now being worked at by Dr. Cabanis, we may soon hope to arrive at a more perfect knowledge of the Avi-fauna of the Central-American isthmus, which has as yet been left comparatively uninvestigated.

Mr. Lawrence's second paper contains a description of two new birds from Panama (*Grallaria perspicillata* and *Polioptila* *superciliaris*) and of a Humming-bird from Venezuela—*Chlorostilbon nitens.*

Mr. D. G. Elliott of New York, F.Z.S., has lately published the first part of an illustrated Monograph of the genus *Pitta*, of which we shall give a notice in our next Number.

The second portion of M. Le Moine's little book on the Ornithology of Canada* has reached us. That this work has attracted attention in Canada is evident from the fact that the first edition is out of print, and that M. Le Moine has already issued a second edition of part 1, of which we have also received a copy.

XLIV.—*Extracts from Correspondence, Announcements, &c.*

Dr. F. Hochstetter informs us that he has been busy in arranging the series of bones of the Moas (*Dinornis*, &c.) which he collected in New Zealand during his sojourn there with the Novara-expedition. Dr. Gustav Jäger has completed the restoration of the skeleton of *Palapteryx ingens*, and prepared sets of plaster casts of all its bones, complete sets of which may be obtained on application to him at Vienna for about £12. The bird stands about 6¾ feet in height. Drs. Hochstetter and Jäger have also prepared for exhibition skeletons of *Dinornis giganteus*, *D. robustus*, *D. elephantopus*, and *D. didiformis*.

"*Palapteryx ingens*," says Dr. Hochstetter, "(which is four-toed, like *Apteryx*), has certainly been exterminated but few generations ago. I am of opinion that when New Zealand was first peopled from the Tonga Islands, about 600 years ago, several species of these giant birds (among which was *Palapteryx ingens*) were still in existence; that these large birds were hunted by the natives and supplied them with flesh, as their songs and traditions abundantly testify; and that the failure of this supply induced them, about 100 years ago, to resort to the disgusting practice of cannibalism, which Cook found so prevalent there."

The following are extracts from Mr. Blyth's letters:—

"Calcutta, April 14th, 1861.

"My genus *Nitidula*, of which I sent a description some time ago*, seems to be founded on the *Nemura hodgsoni*, Moore, which, however, is no *Nemura* (i. e. *Ianthia*, nobis; *Nemura* having been already used in Entomology), but a distinct generic form."

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* Ornithologie de Canada, par J. M. Le Moine. Quebec, 1861, 12mo. 398 pp.

"The Comte de Castelnau (French Consul at Bangkok), writes me word that he has a new species of *Argus* from Camboja, and also a new true *Gallus*, I believe from the same country."

"Maulmein, May 10th, 1861.

"Here I am in the enjoyment of a sea voyage to recruit my health. I have visited Akyab and Rangoon, and next start for Tavoy, Mergui, and the Andaman Islands, thence reversing my former voyage back to Calcutta. Glorious hill-scenery here—jungle-clad and pagoda-capped everywhere, with splendid views and novelty in every shape and form.

"The Common Sparrow of this country is *Passer montanus*, but more rufous above and more whitish beneath than the bird of Britain, Sikhim, and China, from which countries examples are utterly undistinguishable. The note also is a sharp '*chip chip*,' different from that of the British bird, which I remember perfectly, and most readily distinguishable from that of the British and Indian House-Sparrows. At Akyab I observed both species, but not intermixed—the so-called *Tree*-Sparrow becoming a *House*-Sparrow, and so tame that it would hardly get out of your way. At Rangoon we have only the *P. montanus* (?). The house in which I now sit is full of them, and they fly in and out through the rooms and maintain an incessant chirping."

"I have many novelties to describe, received from my late host Col. Phayre, before I left Calcutta. One of the most remarkable is a beautiful second species of true *Crypsirhina*; another is a new form of *Turdinus*-like birds with straight claws—*Merulanthus phayrii*, nobis."

The following extracts are from Mr. R. Swinhoe's last letters:—

"British Consulate, Amoy, March 9, 1861.

"I have just procured a specimen of *Phalacrocorax bicristatus*,

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* See P. Z. S. 1861, p. 201.

Pallas, the second species noted in the 'Fauna Japonica.' This bird is not usually found at Amoy, but its occurrence here is probably due to the unusually cold and high winds that have lately occurred on this coast. My specimen is partially moulted into the plumage of the adult, and has a few white filamentous feathers on the head and neck.

"The Common Crane (*Grus cinerea*) occurs every winter at Swatow, lower down the coast than Amoy, in flocks of 100 or so. They live during their stay chiefly on sweet potatoes (the tuber of *Batatas edulis*). I have procured a partially moulted specimen from that port.

"The Dutch Consul at Amoy has lately made an excursion to the tea-districts at Hing-yang, some 150 miles inland of this, and has brought back the following birds not found near Amoy: *Urocissa sinensis*, *Emberiza cioïdes* of the 'Fauna Japonica,' *Enicurus schistaceus* (?), *Ruticilla fuliginosa*, and my *Hypsipetes holtii*. These specimens are at present in the hands of Mr. G. Schlegel at Amoy, and will eventually grace the Leyden collection."

"Amoy, May 4, 1861.

"Referring to my letter of 20th February *, I must tell you that I have this summer procured a couple of *Larvivora gracilis*, one similar to the one described, and the other of the same form and size, but blue on the upper parts and *pure white* on *all* the under parts. This last was a male, and the former a female. Therefore the bird described in the letter referred to was a male in the 'livrée de passage,' and not in full plumage, and the species may yet prove to be *L. cyanea* of Hodgson.

"Of the Common Cormorant that winters on this coast, I have lately procured a full-plumaged male. It resembles the bird of the 'Fauna Japonica,' except that its cheeks are not white, as there represented, but of a uniform bronze with the rest of the head and neck, which are thickly sown with thick white filaments.

"The *Brachypternus* from Foochow is *much* larger (nearly double the size) than *B. badius* of Java, of which Mr. Blyth has favoured me with a pair. It is of a much richer brown, but would appear otherwise similar.

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[*] See *anteà*, p. 262.

"Among some dozens of *Colymbidæ* lately procured, a few have *red* markings on the throat. This would therefore prove our bird to be *C. septentrionalis,* unless the new species, *C. adamsi,* is also so marked.

"I have to note *Botaurus stellaris* from Swatow, and the following procured for the first time at Amoy:—

"*Emberiza cioïdes* (of the 'Fauna Japonica') from the mainland in February.

"*Ruticilla fuliginosa* (of a uniform smoke-grey, except the red tail), from the neighbouring main in February.

"*Enicurus schistaceus,* also from neighbouring hills on the main. Examples of the latter bird were met with on the margins of pools. They frequently repeated a series of twittering notes not unlike those of the *Tringoïdes hypoleuca,* while they moved their tails up and down violently. The specimen procured agrees exactly with one from Burmah sent to me by Mr. Blyth.

"*Carbo bicristatus,* Temm. et Schl. One immature specimen of this bird was brought to me on the 8th March. It was shot in this harbour, and agrees precisely with the figures in the 'Fauna Japonica.'

"*Calliope kamschatkensis.* Several of these have been procured this spring, both mature and with the white throat.

"*Limosa lapponica* seu *rufa.* One was brought in 12th April, 1861.

"*Xanthopygia leucophrys,* Blyth (?).

"Among several of *X. narcissina,* one bird has *pure white* eyebrows, is more slightly built than the rest, has black upper parts, with golden lower parts, and no flammeous on the throat. I conclude it to be the Malayan species.

"I have lately procured several dozens of females of *X. narcissina,* and I would therefore venture to correct my description of this one given in the Birds of Canton (*anteà,* p. 41). The throat is very rarely golden, and there is no black on the cheeks or white on the wings.

"*Turdus sibiricus.* A fine mature male was brought in 19th April.

"*Emberiza rutila,* Pallas. A fine male, received 20th April, agrees well with the description in the 'Fauna Japonica.'

"*Numenius minor*, Müller. A pair of Whimbrels, brought in at the close of April, are certainly referable to the bird of the 'Fauna Japonica,' and not to *N. phæopus* of Linnæus.

"*Chibia hottentotta* (Linn.). I was truly astonished to receive one of this species on the 29th April. A reference to Gray's 'Genera' at once told me what it was. Its gizzard contained the remains of wasps.

"*Porzana erythrothorax*, Temm. et Schl. A male brought in on 1st May. It is very similar to, but rather larger than, *P. fusca* of Bengal, but the differences are hardly sufficient to warrant a separation.

"*Gallicrex cristata* (L.). A fine male, brought in on 2nd May.

"*Dicrurus cinerascens*, ♀. Brought in on 3rd May.

"These acquisitions add fourteen more to the Amoy list of birds.

"I have at last succeeded in procuring mature specimens of our *Budytes*. The pair brought to me have both grey heads, with white eyebrows and chins, and in other respects answer most minutely to *B. flava* of Linnæus.

"*Anthus thermophilus*, Hodgson (?), still puzzles me. In summer the spots on the breast disappear, and give place to a deep rosy-buff tinge. Mr. Blyth thinks the Chinese species is identical with his *A. rufo-superciliaris* from the Andamans, but further comparison is required.

"I have lately received several specimens of our *Tchitrea*. They *all* have bright purple-red backs; and I cannot agree with you in referring them to *T. principalis* of the 'Fauna Japonica.'

"Dr. Hanse, the botanist, writes me that a friend of his shot three Parrakeets near Canton. I must therefore acknowledge my ignorance, and allow that the specimens of *Loriculus puniculus* in the British Museum, which Mr. Fortune purchased at Canton, were probably procured in that neighbourhood.

"I have lately received from Foochow a fine specimen of *Megalæma virens* (Bodd.). It was brought down, according to the accounts I received, from the hilly regions of Yunnan, alive. I see this uncouth-looking bird has already been noted from China."

"Amoy, May 18, 1861.

"My shooters have just brought in several birds new to this place; namely, of

"*Lobipes hyperboreus,* three specimens, in nearly full summer plumage.

"*Tringa cinclus* (?). One specimen, I think, of this species, with olive-green legs.

"Two of a new *Lusciniopsis,* perhaps referable to Cassin's new species from Japan.

"And a very diminutive *Locustella,* allied to *L. raii.*"

The following letter from Mr. Swinhoe has been forwarded to us for publication by Prof. Schlegel:—

Amoy, June 1, 1861.

Sir,—I have no doubt you will be much pleased to hear that one at least of the doubtful species of the 'Fauna Japonica' has been confirmed. Your son and I have been most assiduous in our endeavours to hunt up the *Biophorus paradisiacus,* having heard that that truly wonderful species was originally brought to Japan from China, but our exertions have hitherto been fruitless. The other species, however, the *Pitta nympha,* we hardly expected to discover, as its habitat is marked Corea. Imagine my joy then this morning when my shooters brought in a bird which I at once recognized as the redoubted *Pitta nympha.* I at once communicated the glorious intelligence to your son, and borrowed his coloured plate. The following notes were the results of our comparison, and, should you think them worth printing, are at your service.

The man who brought me the bird this morning told me that he had shot it while it was sitting on a tree at the foot of the highest hill on this island. Its ovary contained numerous eggs, but none in a very developed state, and its crop was nearly empty; it is therefore natural to suppose that the individual had merely dropped on the island in its migration.

Length $8\frac{1}{2}$ inches; wing $4\frac{8}{10}$; tail $1\frac{9}{10}$, of 14 rectrices; tarse $1\frac{6}{10}$. Bill blackish brown, paling towards the tip. Inside of mouth light pinkish orange. Tongue sagittate, slightly bulging at the sides, concave, horny, and split at the tip. Eye-rim blackish brown; iris hazel. Ear small and somewhat ovate, orifice hidden. Legs, toes and claws light brownish flesh-colour.

The Appendix to the 'Fauna Japonica' says of this species, "Cette Brève offre beaucoup d'analogie avec la Brève à Queue Courte, *Pitta cyanura* (*P. brachyura*, L. ?), du continent de l'Inde, dont elle ne paraît se distinguer que par les caractères suivants. Le vert des parties supérieures est plus clair, et les parties inférieures sont blanc grisâtre, au lieu de jaune brunâtre. Le beau rouge qui se borne dans la Brève à Queue Courte, au bas ventre, se prolonge dans celle de la Corée jusqu'à la poitrine. Le noir enfin, qui occupe les côtés de la tête, s'étend dans cette espèce sous le menton."

Our bird is a female, and answers well to the figure given in the 'Fauna Japonica,' which, from analogy, we should suppose to be a young bird of the species; for the under parts of our bird are of a fine buff, with the exception of the chin and sides of the nape, which are of a pure white. The blue on the wing-coverts is extended throughout the whole of them,—a few of the feathers still remaining partly green, and indicating such to be the actual colouring of the juvenile garb.

On comparing ours with a skin of *P. brachyura* from India, kindly provided by Mr. Blyth, I notice the following differences:—

The bill of our bird is much larger and deeper, and considerbly more corvine, than that of *brachyura*. The occipital band that passes through the eye is much broader, and extends to beneath the bill. The medial coronal stripe is *brown* instead of black, and does not quite unite with the occipital. The back, scapulars, and tertiaries are of a darker, clearer green. The rump and wing-coverts are of a beautiful azure-blue with a pink-purple gloss, some of the feathers being patched with green. The white is much more extended on the quills, some of the inner quills being entirely white to their tips. The axillary coverts are black, without any white. The tail is similarly coloured in both, and the lovely crimson of the under tail-coverts extends up the centre of the belly to the breast. The bird is much larger and much more robust than *P. brachyura*, but bears considerable resemblance to that species. Indeed, were it not for the ventral crimson stripe and its large bill, one would feel almost inclined to look upon it as merely a large variety of the Indian bird.

The measurements of my skin of *P. brachyura* of India are as follows:—

Length $7\frac{2}{10}$ inches; wing $4\frac{2}{10}$; tail $1\frac{7}{10}$; tarse $1\frac{4}{10}$.

I think, on perusing the above, you will agree with me that we have at last discovered the *Pitta nympha*—a species so long established from a Japanese design, but one whose existence was seriously questioned by practical ornithologists. And to think that this Corean wonder should be first met with in the flesh in this barren island of Amoy!

As you will probably give publicity to these notes, I will add my remarks on dissecting its body:—

Œsophagus about $\frac{4}{10}$ in. wide, contracting before the proventriculus, which starts with a breadth of $\frac{4}{10}$ in., and gradually enlarges as it joins the stomach. The proventriculus measures $\frac{8}{10}$ in. and is *smooth*-coated. The stomach is heart-shaped, with stout lateral tendons, and broadly marked exteriorly with perpendicular rings. The epithelium was bright yellow, moveable and rugose; containing only the remains of one spotted field-bug. Intestines $15\frac{1}{2}$ in. long, and varying in thickness from $\frac{4}{10}$ in. to $\frac{1}{10}$ in., marked exteriorly with a sprinkling of hard granules, and having a large round nodule, $\frac{1}{2}$ in. broad, about 4 inches from the anus. This latter is probably the result of disease. Cæca $\frac{1}{10}$ in. long, ovate and adnate, the right one being $1\frac{3}{10}$ in., the left one $1\frac{2}{10}$ in. from the anus. Ovary containing quite a bunch of small eggs.

Yours, &c.,

Robert Swinhoe.

Dr. Schlegel, Leyden Museum.

Mr. Tristram writes to us, that in looking over his collections he finds that in his "Catalogue of the Birds of the Sahara," as given in the two preceding volumes of 'The Ibis,' he has accidentally omitted two very interesting species:—

1. *Cyanecula rubecula*, of which he has two examples in winter plumage, one a female, the other with the sex undetermined.

2. *Anthus spinoletta*, of which he has one specimen, shot, out of a small flock, in the marsh at the edge of the oasis of Laghouat in November 1856. He believes also that he saw a flock of this bird (if not of *A. obscurus*) in January 1857, in the swamps near Tuggurt.

Mr. Tristram also remarks,—

"Had I to rewrite my notes on the Larks of the Sahara, I do not think I should now speak so positively as I have done of the specific distinctness of *Galeridæ abyssinica, isabellina,* and *arenicola.* Not that I should unsay what I said, but I am not now so clear as to the specific rank of races inhabiting areas so very closely conterminous as those of the different districts of the North-African Sahara."

Kilmory, Lochgilp Head, N.B., August 18, 1861.

MR. EDITOR,—I regret that I can give you no further particulars about the Gyrfalcon which I submitted to you in the summer, further than that it was shot in the month of October last, on the island of North Uist, belonging to my father; the keeper thinks it was about the 10th or 12th. I observe it is a much darker specimen than that killed, not five miles from the same place, in March of the previous year, 1859 *. That had all the tail-feathers white, except the two centre ones, though the shafts of the others are of a brown tinge—paler, I have little doubt, from bleaching before found, as it was not secured on the day it was shot.

Believe me, yours truly,
J. W. P. ORDE.

" Of the gigantic *Struthionidæ,* bones of many species occur all over the islands of New Zealand. Feathers have also been found, and fragments of egg-shells; also one perfect egg, taken out of the grave of a native in 1856. It is believed by many natives that none of the species are entirely extinct. They give tolerably minute descriptions of many species; but it is impossible from their descriptions to define the number formerly existing. Professor Owen has detected fourteen distinct species, from the various bones which have from time to time been sent to England. Wherever the bones of the larger species are found, there exists about a quart of pebbles, used doubtless to assist digestion. I can only give the native names and descriptions of a few extinct species. All these birds were hunted by the natives for food.

" *Moa.* The largest species stood 16 feet high. Colour red-brown. Fed on leaves of forest-trees; their legs were too long to allow them to eat off the ground. Bones full of marrow.

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* See 'Ibis,' 1859, p. 469.

"*Kiwi Papa Whenua.* 7 feet high. One of the last birds to disappear. There are still living men who have hunted it.

"*Tokoeka.* 3 feet high. Bright red [!]. Inhabited only the snowy mountains in the neighbourhood of Otago.

"*Po-waka-i.* 10 feet high. Lived on carrion as well as plants. Peculiar to the Middle Island.

"*Kiwi Mokemoke.* 3 feet high. A solitary ash-coloured bird, with a long curved bill. These are all the traditions of the preceding five birds to be relied on. It is highly probable that this species and other smaller ones yet exist among the wild unexplored mountain-ranges of the Middle Island.

"*Great Apteryx* (Kiwi Parure), *Apteryx major.* Inhabits forests and mountains. A night bird. By imitating its call, it is attracted, and then caught with dogs. It is also caught by lighting a large fire, which is sure to attract them. Native report says that this and the next-described species do not sit on their eggs, but cover them up with leaves, the decomposition and fermentation of which, at the expiration of one year, hatches the egg. Probably this report is mere fiction, and the bird always covers its egg on leaving the nest. This species lays only one egg. Its legs are very powerful, sufficiently so as to break the leg of a dog. The egg is white, and 3 inches in length.

"*Little Apteryx* (Kiwi Hoihoi). Smaller than the preceding. My dogs have caught this bird. Lays two eggs. Habits similar to the preceding."—J. B. Ellman in 'Zoologist,' p. 7464 (1861).

Since the publication of our last Number three members of the British Ornithologists' Union have left our shores. Mr. O. Salvin and Mr. F. D. Godman have departed, to continue Mr. Salvin's researches in Guatemala, and thence intend to descend along the Pacific coast to Panama, paying particular attention to the fauna of Costa Rica. Mr. A. F. Sealy has proceeded to India, being about to become a permanent resident at Madras.

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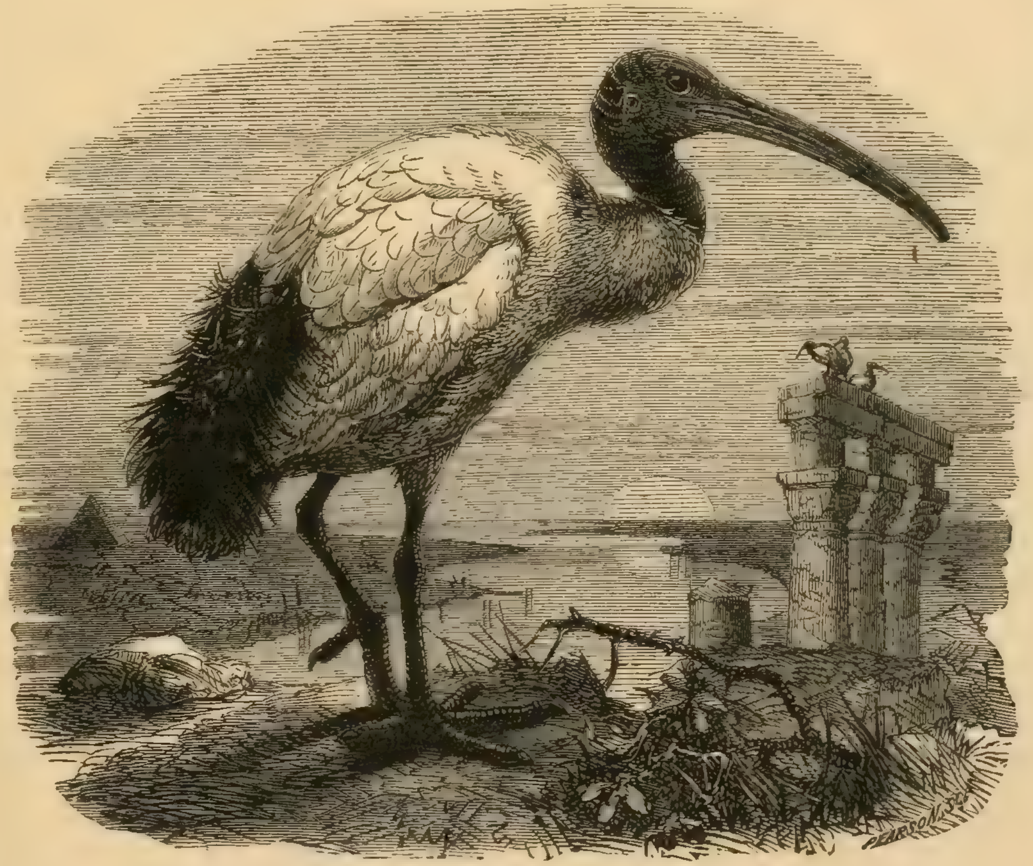

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